Canon SERVICE BULLETIN **COMP. SYSTEMS**
Issued by Canon Europa N.V.

MODEL:

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Date: 24.11.00

SUBJECT:

SERVICE PLAN

FOR

BUBBLE JET PRINTER S450

PRODUCT CODE: Q30-3400-XXX

Outline

The S450 printer is a leveraged model of the BJC-6200 on the market, adopting newly developed inks and having the housing color changed.

As for servicing method, it is the same as with the BJC-6200. The differences from the BJC-6200 and related documentation are as follows.

Differences from the BJC-6200

1. Inks — BK: higher density, Color: Higher brilliance
2. Main unit: — Two-tone color has been adopted for the housing, and the emblem color has been changed.

Changed and added parts will be informed by Service Bulletin.

Related Documentation

Documentation	Product Name
Service Manual	BJC-6200

BJC-6200

SERVICE MANUAL

REVISION 0

Canon

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BJC-6200

SERVICE MANUAL

Canon

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

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This manual has been produced on an Apple Power Macintosh 7300/180 personal computer and OKI MICROLINE 803 PSIIV laser beam printer; artworks of printing films were printed on Agfa SelectSet Avantra 25. All page layouts, logos, and parts-list data were saved with Canon Optical Disc Subsystem mo-5001S™ and Optical Disc Cartridge mo-502M™, and Interface Kit mo-IF2™ for Macintosh. All graphics were produced with MACROMEDIA FREEHAND™ 7.0J. All documents and all page layouts were created with QuarkXpress™ 3.3 Japanese version.

I. ABOUT THIS MANUAL

This manual consists of three parts containing information for servicing the product.

Part 1: Product Specifications

Product overview and specifications.

Part 2: Troubleshooting

A guide to troubleshooting the product and identifying the parts and units needing replacement. Troubleshooting is described according to problem descriptions as well as error indications by the status indicator.

Part 3: Appendix

Block diagrams, information on the hardware technologies, and pin configurations.

Disassembly and reassembly procedures are not fully covered in this manual. Refer to the separate *Parts Catalog* instead.

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1. PRODUCT OUTLINE

1.1 Product Outline

"Standard Color Printer for Personal Use"

1) Dual cartridge system for high-speed monochrome printing and high-speed color printing.
2) Printer cartridge incorporates ink drop modulation technology for high-quality 1440 × 720 dpi printing.
3) Separate ink cartridges and tanks for all colors to reduce running costs.
4) USB interface enables connection to Windows 98/2000, iMac, and Power Macintosh G3/G4 computers.
5) Optional drop-in scanner cartridge.
6) Photo cartridge enables six-color, density-matched photo-quality printing.
7) Black cartridge contains pigment-colored ink for truer black text printing.
8) Highly precision ink-low detection with an optical system and dot count.
9) Stabilized image printing with the easy to use automatic print position adjustment.

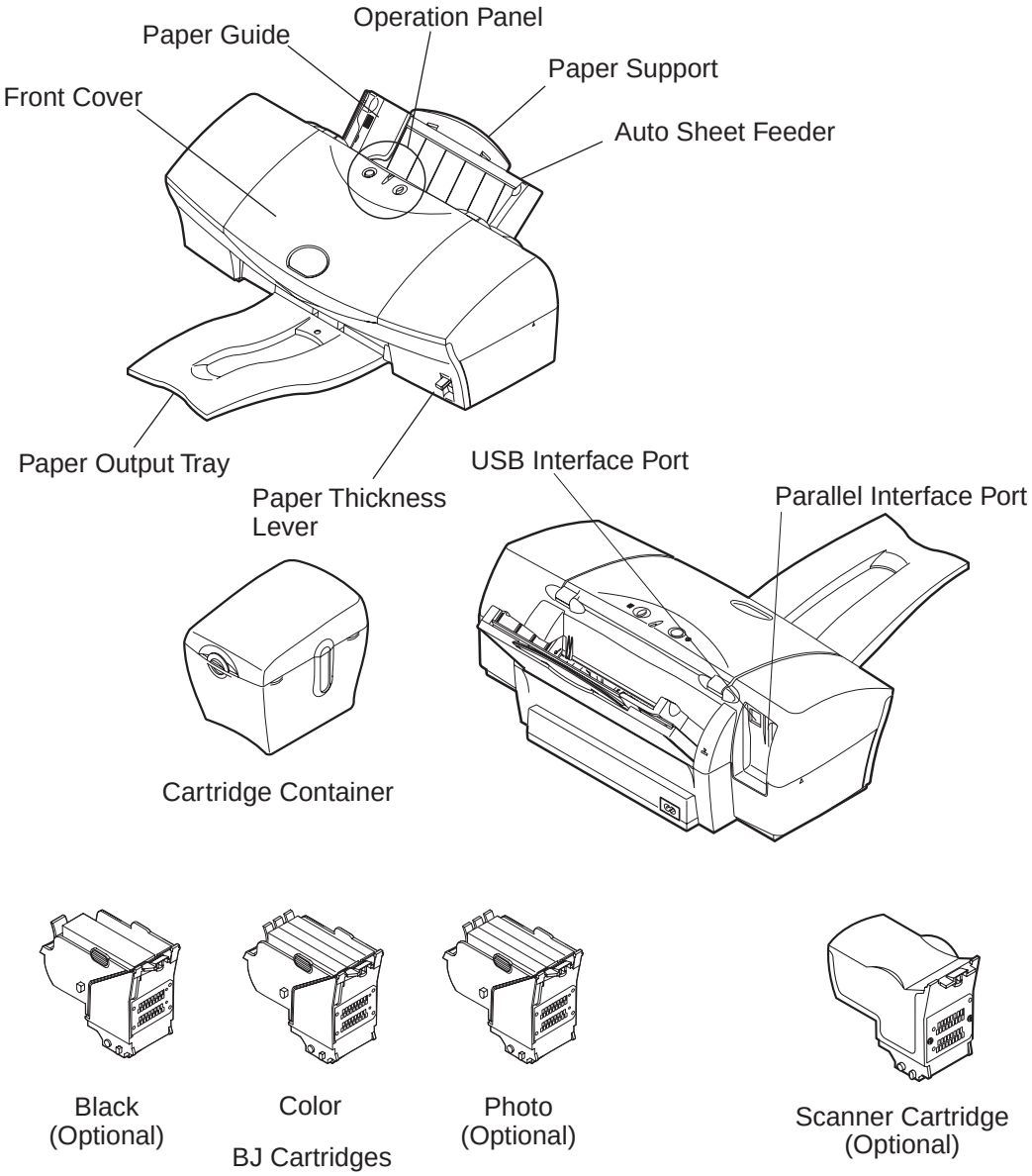

Figure 1-1 Printer Appearance

2. SPECIFICATIONS

2.1 Printer Specifications

2.1.1 Printer specifications

Type	Desktop serial printer
Paper Feed System	Automatic feed only (No manual feed)
Resolution	1440 × 720 dpi (Max. resolution)
Throughput (Reference only)	High-speed / Standard / High-quality BC-30 + BC-31 Cartridge Black Text (PC Magazine): 9.6 ppm / 7.7 ppm / 1.7 ppm New monochrome pattern (J): 10 ppm * / 8.3 ppm * / 2.0 ppm New color pattern (J): 7 ppm * / 3.7 ppm * / 1.2 ppm BC-32 Photo + BC-31 Cartridge Full Address Printing: - / - / 0.14 ppm * * Catalog specification.
Printing Direction	HS mode (180 × 180 dpi): Bidirectional HQ mode (360 × 360 dpi, 720 × 720 dpi): Unidirectional/Bidirectional Fine mode (360 × 360 dpi, 720 × 720 dpi, 1440 × 1440 dpi): Bidirectional
Max. Printing Width	203 mm
Interface	USB, IEEE 1284-standard, 8-bit parallel (Compatible/Nibble/ECP)
ASF Capacity	Plain paper: Max. 10 mm (Approx. 100 sheets with 64 g/m^2) BJ Printer paper: Max. 10 mm (Approx. 80 sheets of high-quality paper)
Sensors	・Front cover-open sensor ・BJ cartridge sensor ・BJ cartridge ID sensor ・No-ink sensor ・Internal temperature sensor ・Printing position sensor ・Paper sensor ・Waste-ink capacity sensor ・Paper width sensor: None
Operating Noise	Approx. 45 dB (A) Sound pressure level conforms to ISO 9296.
Ambient Conditions	During operation: Temperature 5°C-35°C (41°F-95°F) Humidity 10%-90% RH (No condensation) During non-operation: Temperature 0°C-35°C (32°F-95°F) Humidity 5%-95% RH (No condensation)
Power Source	Power voltage/frequency / Power consumption / During standby 100-120 VAC 50/60 Hz / Approx. 30 W / 3.5 W 220-240 VAC 50/60 Hz / Approx. 30 W / 3.5 W
External Dimensions	Approx. 455 mm (W) × 312 mm (D) × 173 mm (H) (With retracted paper support and no output tray.)
Required Space	Approx. 455 mm (W) × 562 mm (D) × 248 mm (H) (With output tray and retracted paper support.)
Weight	Approx. 4.1 kg
Standard Conformance	Radio-wave interference: FCC, IC, CE Mark, Taiwan EMC, C-Tick, VCCI Electrical safety: UL, C-UL, CB Report, GS, CE Mark, FIMKO, SEMCO, IEC, AS, CCIB, SISIR, Korean Electric Commerce, NEMKO Environmental: Energy Star, Blue Angel

2.1.2 Printer service life

The printer's service life extends until any of the following conditions is attained:

(1) A total of 20,000 sheets are printed with 1,500 character standard in black ink.

(2) A total of 6,000 sheets are printed at 7.5% duty per color.

(3) Five years of operation elapses.

2.2 Paper Specifications

2.2.1 Paper sizes and weights

(1) Paper sizes

A4, B5, A5, A5 landscape, letter, legal, envelope (C4 and C6), postcard

(2) Weight

64 g - 105 g/m^2 for auto feeding

2.2.2 Paper types and handling

Type		Size	ASF Capacity	Paper Thickness Lever Position
Plain paper	-	A4/B5/LTR/LGL/ A5 (Portrait/ Landscape)	Approx. 10 mm or less (Approx. 100 sheets of 64 g weight)	Up
Plain paper for Color BJ	LC-301*	A4/LTR	Approx. 10 mm or less	Up
High-quality paper	HR-101*	A4/LTR	Approx. 10 mm or less	Up
Photo glossy paper	GP-301*	A4/LTR	Less than 10 sheets	Up
Glossy film	HG-201*	A4/LTR	1 sheet	Up
Transparency film	CF-102*	A4/LTR	Less than 30 sheets	Up
Back print film	BF-102*	A4/LTR	Less than 10 sheets	Up
Banner	BP-101*	A4/LTR	1 sheet	Down
T-shirt transfer	TR-201*	A4/LTR	1 sheet	Down
Photo glossy card	FM-101*	120 mm × 216 mm	1 sheet	Up
Postcard		100 mm × 148 mm	Less than 40 sheets	Up
Envelope	COM #10 DL-size	241 mm × 105 mm 220 mm × 110 mm	Less than 10 sheets Less than 10 sheets	Down Down

* Paper dedicated to BJ printers.

If the Paper Thickness Lever is not properly set, problems with paper feeding or printing may occur.

2.2.3 Printable area

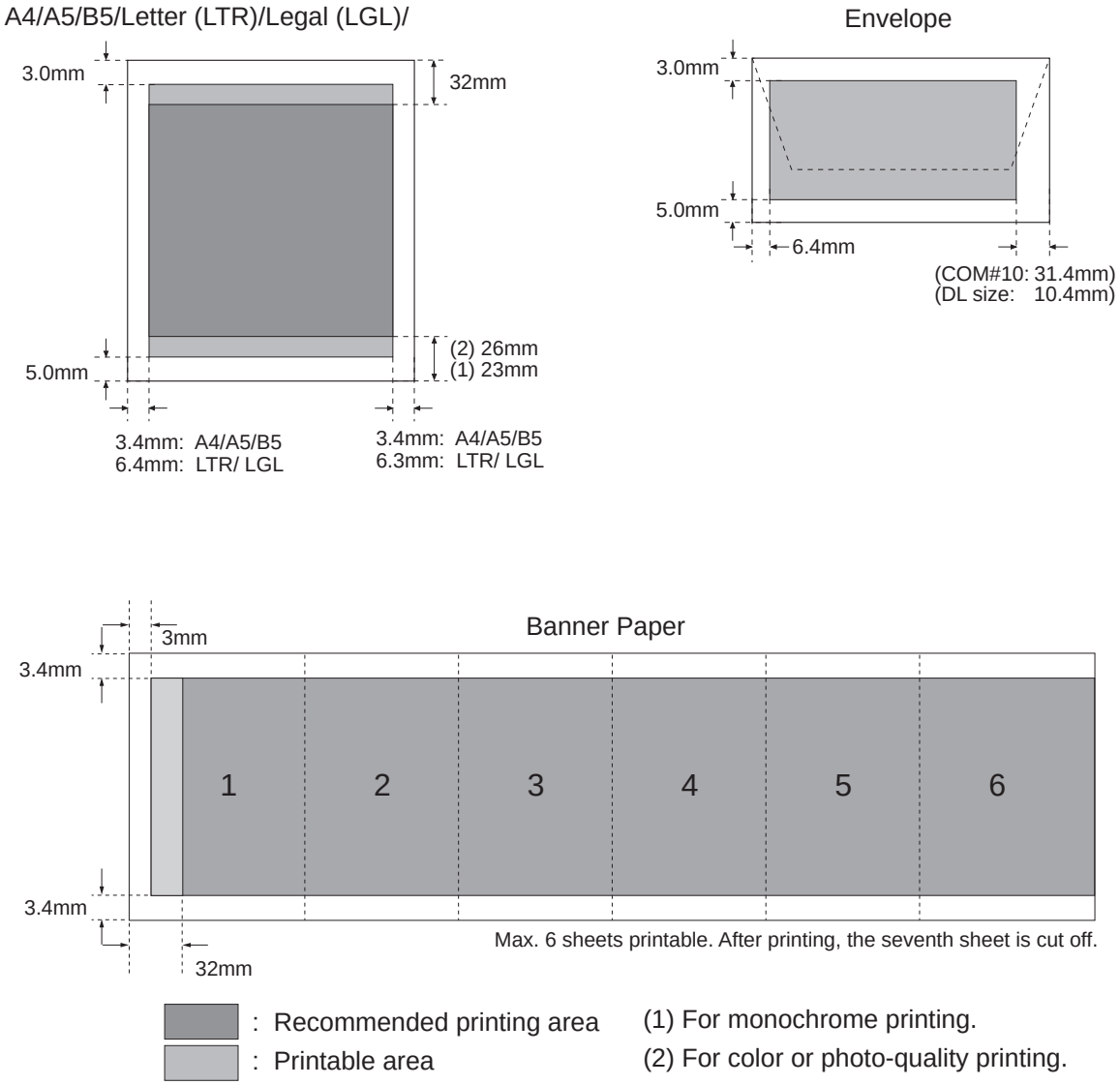

Figure 1-2 Printable Area

2.3 BJ Cartridge Specifications

	Black BJ Cartridge BC-30	**Color BJ Cartridge BC-31**	**Photo BJ Cartridge BC-32 Photo**
Construction	Detachable ink tank	Detachable ink tank	Detachable ink tank
Head	160 nozzles (Vertical array)	144 nozzles (Vertical array)	144 nozzles (Vertical array)
	Bk (160 nozzles × 1)	C, M, Y (48 nozzles × 3)	Bk, C, M (48 nozzles × 3)
Ink colors	Pigment black	Dye C, M, Y	Dye PBk, PC, PM
Tank	BCI-3BK	BCI-3C, BCI-3M, BCI-3Y	BCI-3BK Photo, BCI-3PC Photo, BCI-3PM Photo
Weight	60 g (w/o ink tank)	60 g (w/o ink tank)	60 g (w/o ink tank)
Service Life	Approx. 5000 sheets	Approx. 3000 sheets	Approx. 3000 sheets
Printable	Approx. 500 sheets/tank	Approx. 280* sheets/tank	Approx. 280* sheets/tank
Sheets	(1,500 black characters/page)	(7.5% printing per color)	(7.5% printing per color)

* Based on the printable area of A4 paper.

2.4 Optional Scanner Cartridge Specifications

Designation	IS-32
Type	Cartridge replacement type color scanner
Resolution (dpi)	90 × 90, 180 × 180, 200 × 180, 300 × 360, 360 × 360, 720 × 720
Imaging Sensor	256-pixel, linear (single line) CCD
Light Source	RGB (Red, Green, Blue)
Scanning System/Direction	RGB-switching progressive scanning
Document Feeding	Document inserted in scanning holder and fed via the ASF
Interface	ECP/Nibble
External Dimensions	Approx. 41 mm (W) × 90 mm (D) × 77 mm (H)
Weight	Approx. 100 g
Other Specifications	Printer setting for scanning: Paper thickness lever must be up. Paper sizes for scanning: A4/LTR size or smaller (with BJ F620) Paper thickness for scanning: 0.25 mm or less
Scanning Time (reference)*	Approx. 3 min. 14 sec. (DTP color mode: A4, 180 dpi) Approx. 6 min. 15 sec. (Photo mode: A4, 360 dpi)

* Measurement Conditions
  - Computer: Dell XPS T550 (Pentium III 550 MHz, 256MB RAM)
  - Interface: Parallel interface, ECP mode
  - Scanning paper size: A4
  - The scanning time spans from the start of the carriage scanning operation to the output of the document.

2.4.1 Scannable area

When scanning a document, be sure to use the scanning holder to prevent paper jamming. Align the document with the scanning baseline when placing it in the scanning holder.

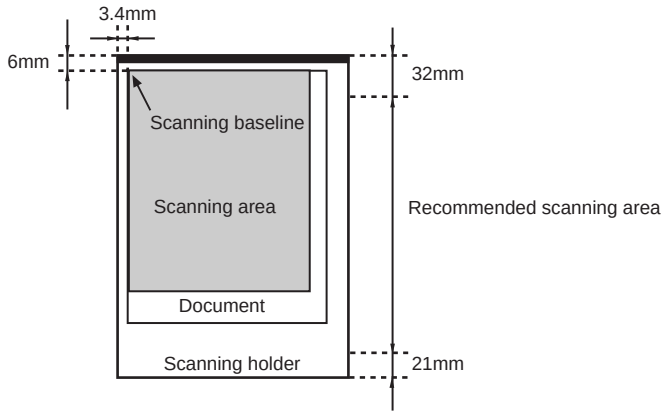

Figure 1-3 Scannable Area

The document sizes and scanning area are listed below.

Document	Size (W × H) mm	Scannable Area* (W × H) mm
Postcard	100.0 × 148.0	93.2 × 138.0
A5	148.0 × 210.0	141.2 × 200.0
B5	182.0 × 257.0	175.2 × 247.0
A4**	210.0 × 297.0	203.2 × 287.0
Letter**	215.9 × 279.4 (8.5 × 11.0 in.)	208.2 × 269.4

* The actual scannable area may vary slightly depending on the monitor's display resolution and the scanner's scanning resolution.

** If the B5 Scanning Holder (provided with Scanner Cartridge IS-32) is used to scan a large-size document, the optional A4/LTR Scanning Holder (SH-101) will be required.

2.5 Printer and Scanner Drivers

The drivers and interface ports that can be used with the printer are listed below.

	Printer Driver		Scanner Driver	
	Parallel I/F	USB I/F	Parallel I/F	USB I/F
Windows 95/98	○	△*	○***	△*
Windows NT4.0	○	×	○***	×
Windows 2000	○	○*	○***	○*
Macintosh	---	○**	---	○**

○: Compatible. △: Conditionally compatible. ×: Incompatible.

* For USB, compatibility is assured only with personal computers with Windows 98/2000 preinstalled.

** Compatible with iMac and Power Macintosh G3. iMac running on Mac OS 8.1 requires iMac updater 1.0.

*** Common driver for Windows 95/98/NT 4.0/2000. Operates in Nibble or ECP mode.

1) Window Drivers

Win 95/98 BJ raster printer driver (IEEE 1284, 8-bit parallel and USB supported)
Win NT 4.0 BJ raster printer driver
Win 2000 BJ raster printer driver
Windows 95/98/NT 4.0/2000 scanner driver IS Scan

2) Macintosh Drivers

Mac BJ printer driver (USB)
Mac scanner driver IS Scan (USB)

3. PACKING CONFIGURATION

After opening the package, make sure all the items below have been included.

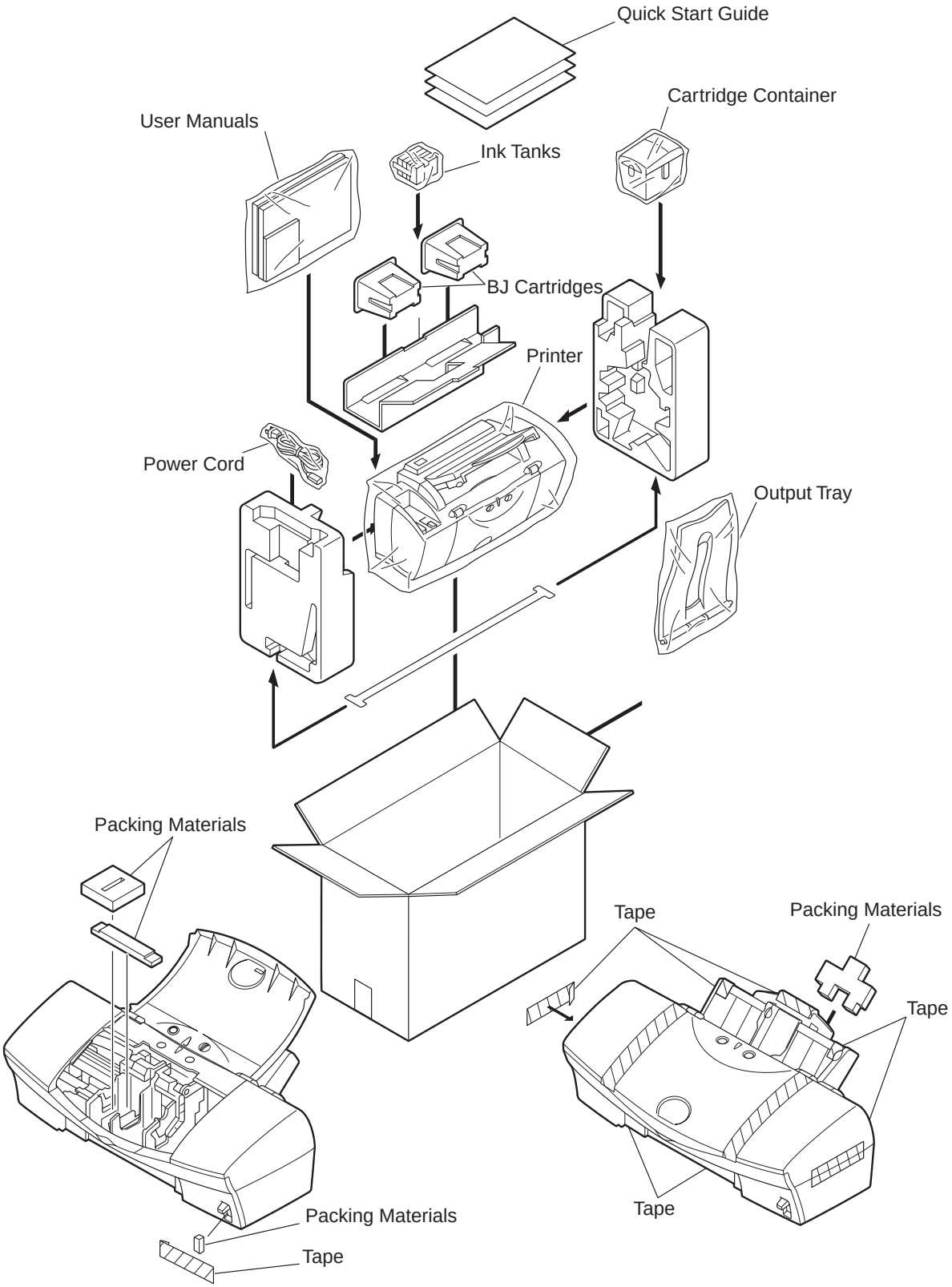

Figure 1-4 Packing Configuration

4. PARTS CODE LIST

A list of printer parts, consumables, and optional equipment are listed below.

Table 1-1 PARTS CODE LIST

Item		Designation	Product Code
Printer	-	BJC-6200	Q30-3310 Q30-3312
BJ cartridge	Black	BC-30	F45-1471
	Color	BC-31	F45-1481
	Photo	BC-32 Photo	F45-1501
Ink cartridge	Black	BCI-1BK	F47-2171
	Cyan	BCI-3C	F47-2181
	Magenta	BCI-3M	F47-2191
	Yellow	BCI-3Y	F47-2201
	Photo black	BCI-3PBK Photo	F47-2231
	Photo cyan	BCI-3PC Photo	F47-2211
	Photo magenta	BCI-3PM Photo	F47-2221
Cartridge storage box	-	SB-30	Q70-4040
Scanner cartridge	-	IS-32	Q70-4070
A4/LTR scanning holder	Scanning holder Standard white sheet	SH-101	Q70-3640

* Items included with BJC-6200: BC-30, BC-31, BCI-3BK, BCI-3C, BCI-3M, BCI-3Y, SB-30.

Part 2

TROUBLESHOOTING

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1. PRINTER OPERATION

The printer's operation status is indicated by the status indicator, and the printer can be controlled from the computer or with the printer itself.

1.1 Status Indicator

The printer's operation status is indicated by the indicator. When an error occurs, the nature of the error can be known by the number of times the indicator blinks in orange and/or green.

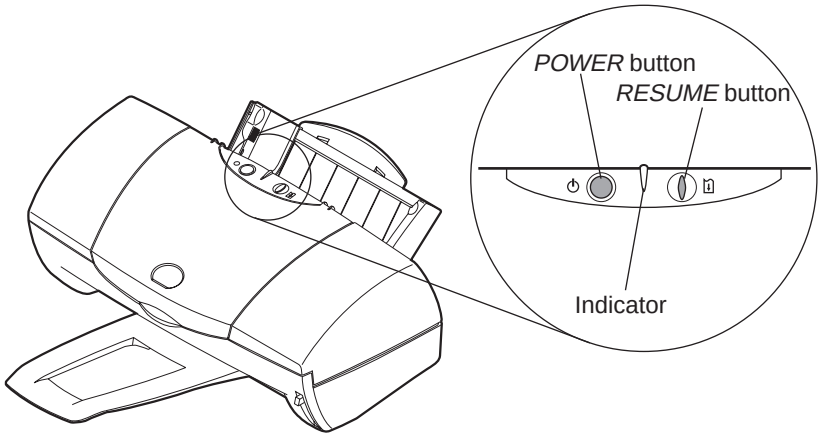


Figure 2-1 Operation Panel

1.1.1 Status display via the indicator

The operation status indicated by the indicator is as follows.

Indicator	Operation Status
Green light	Power ON
Green blinking	Power ON operation in progress, power OFF operation in progress, reset operation in progress, cleaning in progress, test printing, front cover open, printing in progress.
OFF	Power OFF

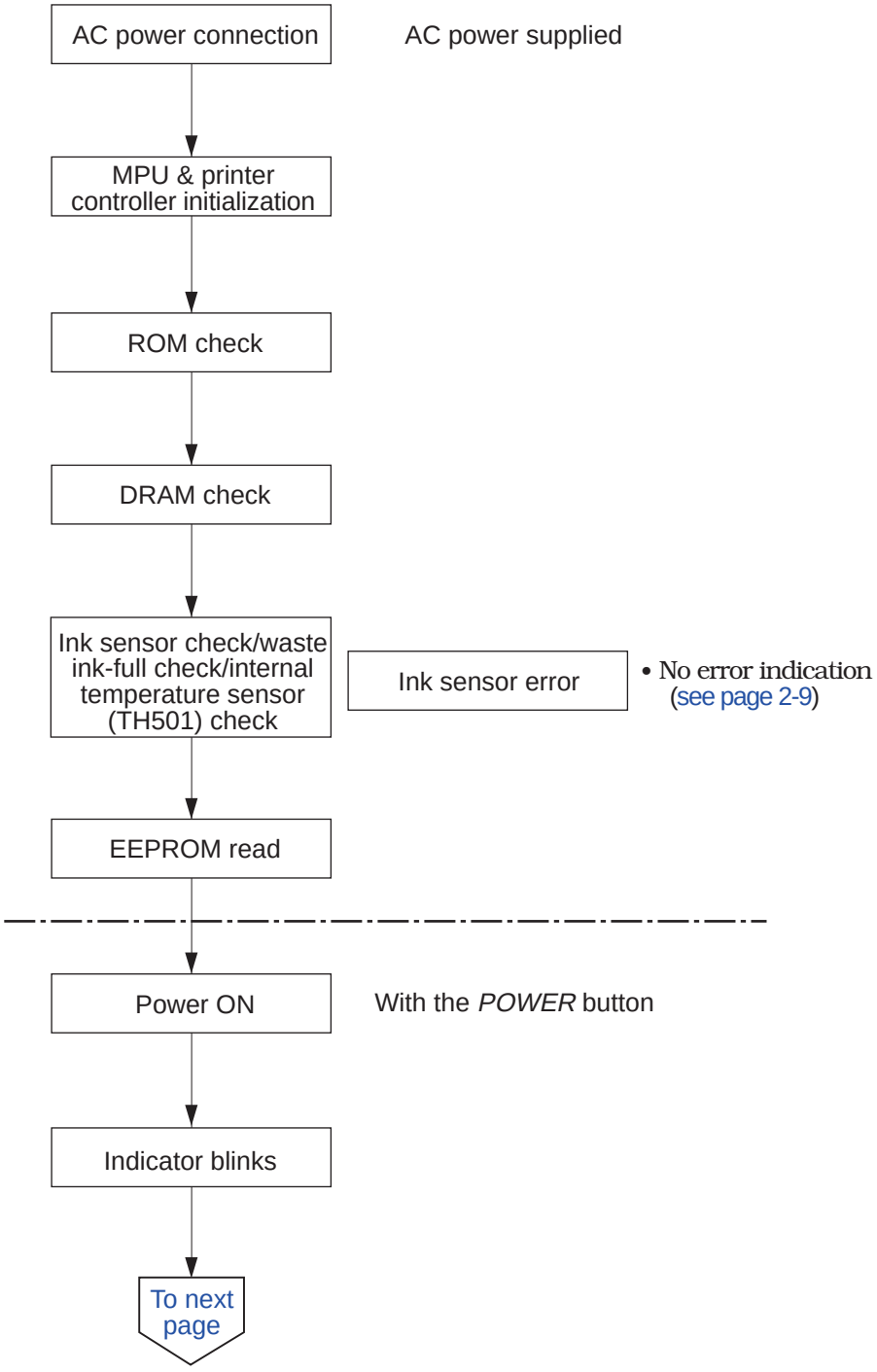
2. SERVICING

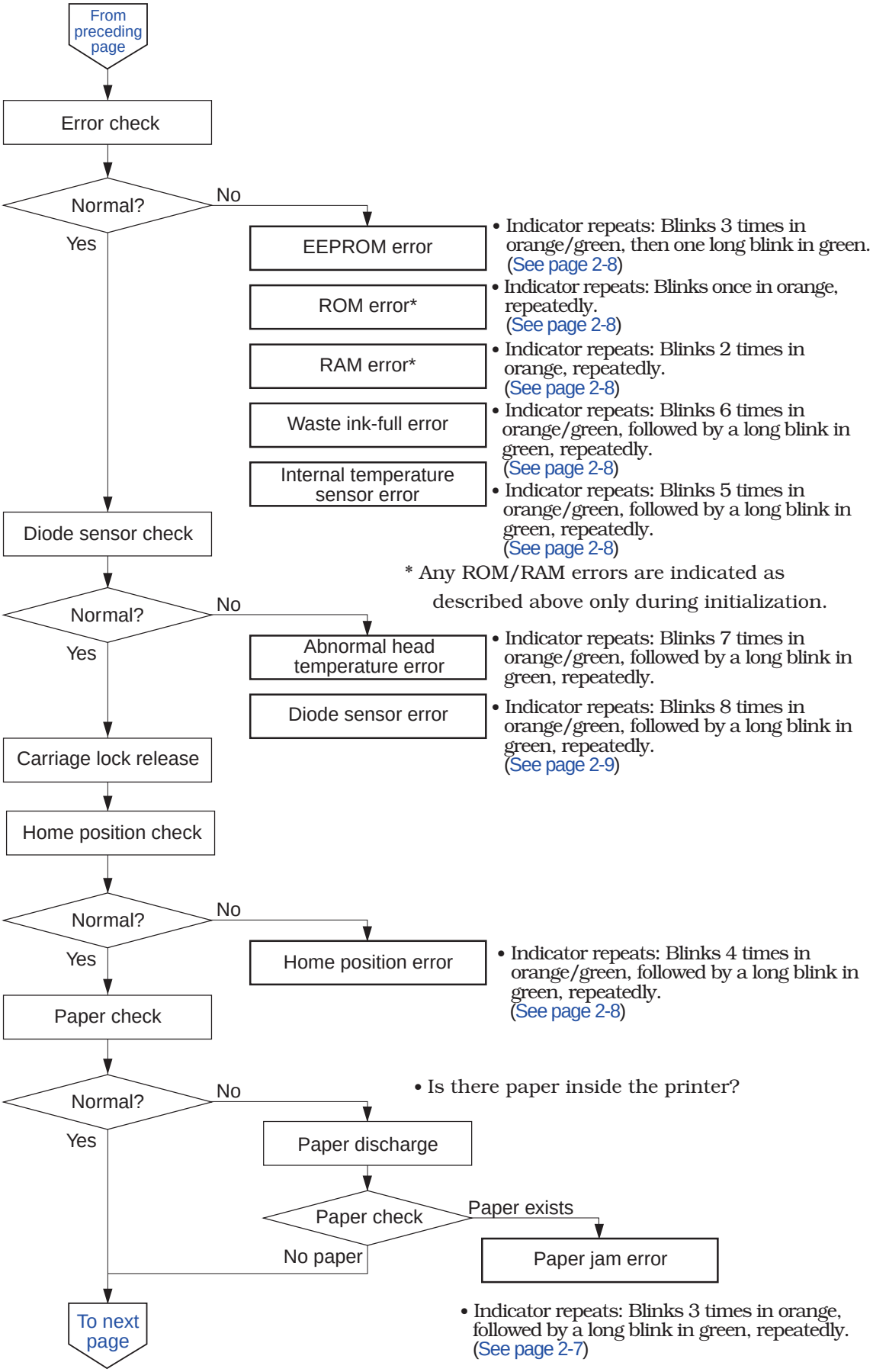
2.1 Before Troubleshooting

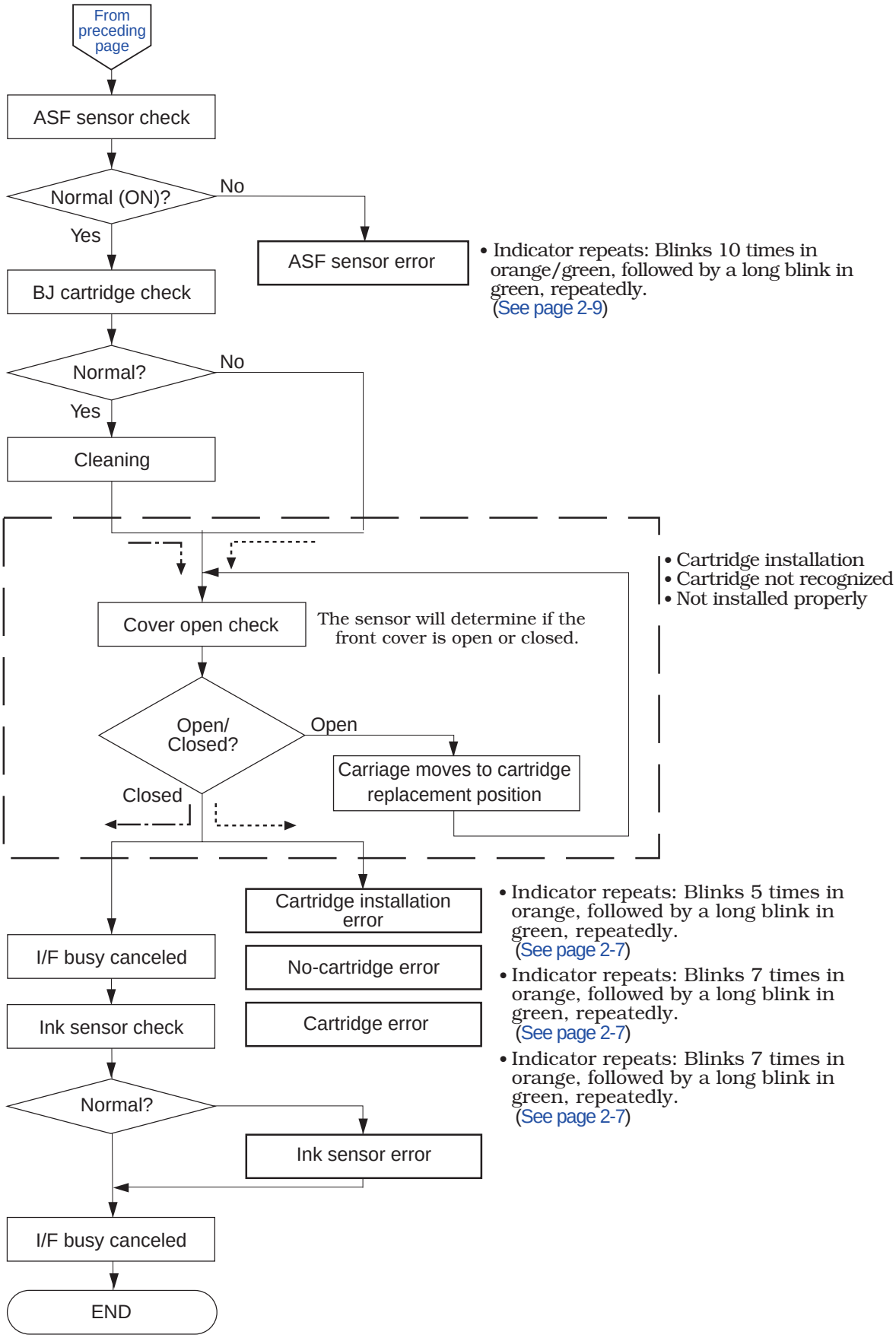
Before troubleshooting the printer, check the following and see if any of the applicable problems can be fixed.

Problem	Probable Cause	Solution
The printer does not operate at all	The power outlet is not supplying the required voltage.	Connect the AC cord to a power outlet that supplies the required voltage.
	The power cord is not properly connected to the printer or power outlet.	Check that the power cord is connected properly.
	The power switch is not ON.	Turn on the power switch.
Paper feeding does not work	The recommended paper is not being used.	Use the recommended paper.
	There is foreign matter in the paper feed section (sheet feeder, pinch roller, LF roller, platen, spurs).	Remove the foreign matter.
	The paper thickness lever is not set properly.	Set the lever to the proper setting.
No printing	The print head needs cleaning.	Conduct cleaning.
	The ink cartridge is empty.	Replace the ink cartridge.
	The BJ cartridge has not been used for a prolonged period.	Conduct cleaning. If the problem still persists, replace the BJ cartridge.
	The recommended paper is not being used.	Use the recommended paper.
	The print head is installed in the wrong position.	Install the print head properly.
	The orange tape is still affixed to the print head.	Remove the orange tape.
Stripes appear in the printing	The print head position adjustment has not been done.	Execute the print head position adjustment. See page 2-19.

2.2 Detectable Problems from System Start to Exit




From preceding page
Error check
Normal?
No
Yes
EEPROM error
• Indicator repeats: Blinks 3 times in orange/green, then one long blink in green. (See page 2-8)
ROM error*
• Indicator repeats: Blinks once in orange, repeatedly. (See page 2-8)
RAM error*
• Indicator repeats: Blinks 2 times in orange, repeatedly. (See page 2-8)
Waste ink-full error
• Indicator repeats: Blinks 6 times in orange/green, followed by a long blink in green, repeatedly. (See page 2-8)
Internal temperature sensor error
• Indicator repeats: Blinks 5 times in orange/green, followed by a long blink in green, repeatedly. (See page 2-8)
* Any ROM/RAM errors are indicated as described above only during initialization.
Diode sensor check
Normal?
No
Yes
Abnormal head temperature error
• Indicator repeats: Blinks 7 times in orange/green, followed by a long blink in green, repeatedly.
Diode sensor error
• Indicator repeats: Blinks 8 times in orange/green, followed by a long blink in green, repeatedly. (See page 2-9)
Carriage lock release
Home position check
Normal?
No
Yes
Home position error
• Indicator repeats: Blinks 4 times in orange/green, followed by a long blink in green, repeatedly. (See page 2-8)
Paper check
Normal?
No
• Is there paper inside the printer?
Yes
Paper discharge
Paper check
Paper exists
No paper
Paper jam error
To next page
• Indicator repeats: Blinks 3 times in orange, followed by a long blink in green, repeatedly. (See page 2-7)


From preceding page
ASF sensor check
Normal (ON)?
No
Yes
ASF sensor error
• Indicator repeats: Blinks 10 times in orange/green, followed by a long blink in green, repeatedly.
(See page 2-9)
BJ cartridge check
Normal?
No
Yes
Cleaning
• Cartridge installation
• Cartridge not recognized
• Not installed properly
Cover open check
The sensor will determine if the front cover is open or closed.
Open/ Closed?
Open
Carriage moves to cartridge replacement position
Closed
Cartridge installation error
No-cartridge error
Cartridge error
• Indicator repeats: Blinks 5 times in orange, followed by a long blink in green, repeatedly.
(See page 2-7)
• Indicator repeats: Blinks 7 times in orange, followed by a long blink in green, repeatedly.
(See page 2-7)
• Indicator repeats: Blinks 7 times in orange, followed by a long blink in green, repeatedly.
(See page 2-7)
I/F busy canceled
Ink sensor check
Normal?
Ink sensor error
I/F busy canceled
END

2.3 Troubleshooting Problems

Problem	Probable Cause / Check Items	Solution
Power does not come on	AC adapter, control board, DC cable.	Replace faulty part.
No printing	BJ cartridge, purge unit, ink tank, or orange cap/tape still affixed to print head.	Replace faulty part.
White stripes or smearing appear	BJ cartridge, faulty BJ cartridge contacts, cartridge ribbon cable, purge unit, control board, ink tank.	Replace faulty part.
Soiled paper	Ink mist, etc., at the platen's paper guide plate is soiling the paper.	Use a soft cloth dampened with water to clean.
	Check for any ink adhering to the paper transport parts. (The paper is already soiled when it reaches the platen.)	Disassemble the paper transport parts and use a soft cloth dampened with water to clean. Pass several sheets through.
Spur tracks appear	Deformed spur tips.	Replace the spur unit.
Broken vertical lines	Paper thickness lever not properly set.	Set it to the proper position.
	The nozzle check pattern's printout is misaligned.	Readjust the printing position.
	Guide shaft not greased properly.	Apply proper amount of grease on the stipulated parts.
	Faulty carriage motor.	Replace carriage motor.
Error does not occur at ink-out	Ink sensor, control board	Replace faulty part.
Abnormal noise	LF motor 2-step gear, purge unit, sheet feeder unit, orange cap still attached to the print head.	Replace faulty part.

2.4 Troubleshooting With Error Indications

1) Error indication when a user-recoverable error occurs
The indicator indicates an error by blinking in orange for a certain number of times.
After it blinks in orange to indicate the error, it blinks once, long, in green.
This indication is repeated.

2) Error indication when an error un-recoverable by the user occurs
The indicator indicates an error by blinking alternately in orange and green for a certain number of times.
After it blinks in orange and green to indicate the error, it blinks once, long, in green. This indication is repeated.

* The error code is displayed by the computer. With the iMac and Power Macintosh G3, a "D" or "M" is appended to the beginning of the error code.

** The waste-ink warning can be canceled by pressing the *RESUME* button.

*** Error information for internal errors is not displayed nor indicated.
You can check it by printing the EEPROM information. See *7.3 Printing the EEPROM Information on page 2-30*.

**** If a ROM or RAM error occurs, the error indication might not be correct.

Table 2-1 ERROR INDICATIONS

Indicator Blinking	*Error Description Code**	*Probable Cause and Suspected Parts*
User-Recoverable Errors		
2 times in orange [1]	--- Paper feed error	Cause: Paper feed does not work even when the paper feed operation is attempted. Suspect: Paper feed section, sheet feeder unit, paper-end sensor, control board
3 times in orange [1]	--- Paper jam error	Cause: The paper is not ejected, even when the paper ejection operation is attempted for 23 inches. Suspect: Paper feed section, paper-end sensor, control board
4 times in orange [1]	--- Out of ink error	Cause: No ink in the respective ink tank (ink compartment and sponge). Suspect: Ink tank
5 times in orange [1]	--- Cartridge installation error	Cause: The wrong cartridge (BJ cartridge or scanner cartridge) is installed in the carriage for printing or scanning. Suspect: BJ cartridge, scanner cartridge
6 times in orange [1]	--- No-cartridge error	Cause: No cartridge has been installed. Suspect:
7 times in orange [1]	--- Cartridge error	Cause: The cartridge installed is defective. Suspect: BJ cartridge

[1] User-recoverable errors are indicated by the specified number of blinks in orange, followed by a long blink in green, repeated.

8 times in orange	---	Waste-ink warning**	Cause: The total waste-ink count recorded in the EEPROM exceeds 95% of the stipulated amount indicating waste-ink full. Suspect: Waste-ink absorber, control board
9 times in orange	---	Auto Print Position Adjustment	Cause: Auto head position adjustment problem occurred. Suspect: BJ cartridge, ink tank, printing position sensor, control board carriage ribbon cable

[1] User-recoverable errors are indicated by the specified number of blinks in orange, followed by a long blink in green, repeated.

Non User-Recoverable Errors

1 time in orange/green	---	ROM error****	Cause: ROM check failed during initialization. Suspect: ROM, control board
2 times in orange/green	---	RAM error****	Cause: RAM check failed during initialization. Suspect: DRAM, MPU & print controller, control board
3 times in orange/green	6800	EEPROM error	Cause: EEPROM cannot be written to properly. Suspect: EEPROM, MPU & print controller, control board
4 times in orange/green	5100	Home position error	Cause: The carriage's home position cannot be detected because the home position sensor is faulty (disconnected, etc.). Suspect: Home position sensor, purge unit, carriage motor, paper feed motor, control board, carriage ribbon cable, carriage board, DC cable
5 times in orange/green	5400	Internal temperature sensor error	Cause: The temperature sensor (TH501) on the control board is faulty (disconnected, etc.). Suspect: Thermistor, control board
6 times in orange/green	5B00	Waste ink-full error	Cause: The waste-ink absorber reached 100% of the waste-ink capacity. Suspect: Waste-ink absorber, control board Solution: Reset the EEPROM, replace waste-ink absorber, replace control board
7 times in orange/green	5200	Abnormal print head temperature error	Cause: The print head's temperature is abnormally high. Suspect: BJ cartridge, control board, no ink in ink tank

Non User-Recoverable Errors are indicated by the specified number of blinks in orange and green, followed by a long blink in green, repeated.

8 times in orange/green	5200	Print head temperature sensor (diode sensor) error	Cause: Faulty temperature sensor in the BJ cartridge. Suspect: BJ cartridge, control board
9 times in orange/green	5600	No cartridge error	Cause: The cartridge cannot be detected other than at the cartridge replacement position. Suspect: Cartridge, control board, carriage board, carriage ribbon cable. Improper contact between cartridge and carriage.
10 times in orange/green	5700	ASF sensor error	Cause: During the pick-up operation, the pick-up roller does not rotate, or, the pick-up roller sensor cannot detect the pick-up roller flag. Suspect: Sheet feeder unit, purge unit, control board
11 times in orange/green	5210	Scanner cartridge error	Cause: Faulty data in the scanner cartridge. Suspect: Scanner cartridge, control board
12 times in orange/green	5000	Recovery system error	Cause: While AP motor or LF motor runs, the PG sensor does not turn ON or OFF. Suspect: Purge unit, AP motor, LF motor, control board

Internal Error

No error indication	---	Ink sensor	Cause: The check by the ink sensor during initialization indicates that ink is available when there is none. The ink sensor does not check the ink until the AC power is turned off. In this case, the ink compartment is always recognized to have ink.
		error***	Suspect: Control board, ink sensor, ink tank, EEPROM

3. DISASSEMBLY AND REASSEMBLY

3.1 Cautions for Disassembly and Reassembly

3.1.1 Ink stains (Ink path/ink mist)

During servicing, be careful not to touch the ink path and get ink stains on the printer, work table, and your hands and clothing.

The ink path includes the BJ cartridge's ink tank supply inlet, the BJ cartridge's ink filter, the ink nozzles and maintenance jet receptacle, head cap, wiper, and waste-ink absorber.

Also, a printer that has seen long-term use or heavy-duty use may have ink mist soiling the platen, inside the front cover, and purge section.

Such soiled parts can soil the paper or your hands and clothing during servicing. To prevent this, use a soft cloth dampened with water to clean the parts thoroughly.

3.1.2 Static electricity damage

The rubbing of clothing can build up static electricity within the human body. Static electricity can destroy electrical components or alter the electrical characteristics of components.

Never touch the ink sensor's contacts or the contacts on the BJ cartridge on the carriage.

3.1.3 Spur tips deformation

Be careful not to deform the spur tips.

The spur tips contact the paper after the printing. Since the spur tips' contact area is small, any ink adhering to the spur will be a minuscule amount that can be wiped off by the spur cleaner. It therefore will not soil the paper. However, if the spur's tips are bent of out of shape, the contact area with the paper will be larger, resulting in a larger amount of ink adhering to the spur, which might not be completely cleaned. The spurs will then soil the paper with dotted lines.

3.1.4 Feed gear damage

When disassembling or reassembling the printer, do not touch the paper feed gears (feed roller gear and feed drive gear). Note that even a slight scratch on the paper feed gear will cause irregular paper feeding during high-quality printing.

3.1.5 Tap screw removal and installation

The printer uses tap screws to fasten the printer unit and base. The removed tap screws will have residue from the mold in which the internal thread was made. Since the residue may crush the screw threads, clean off the residue from the tap screws before re-installing them, or use new tap screws.

3.2 Exploded View

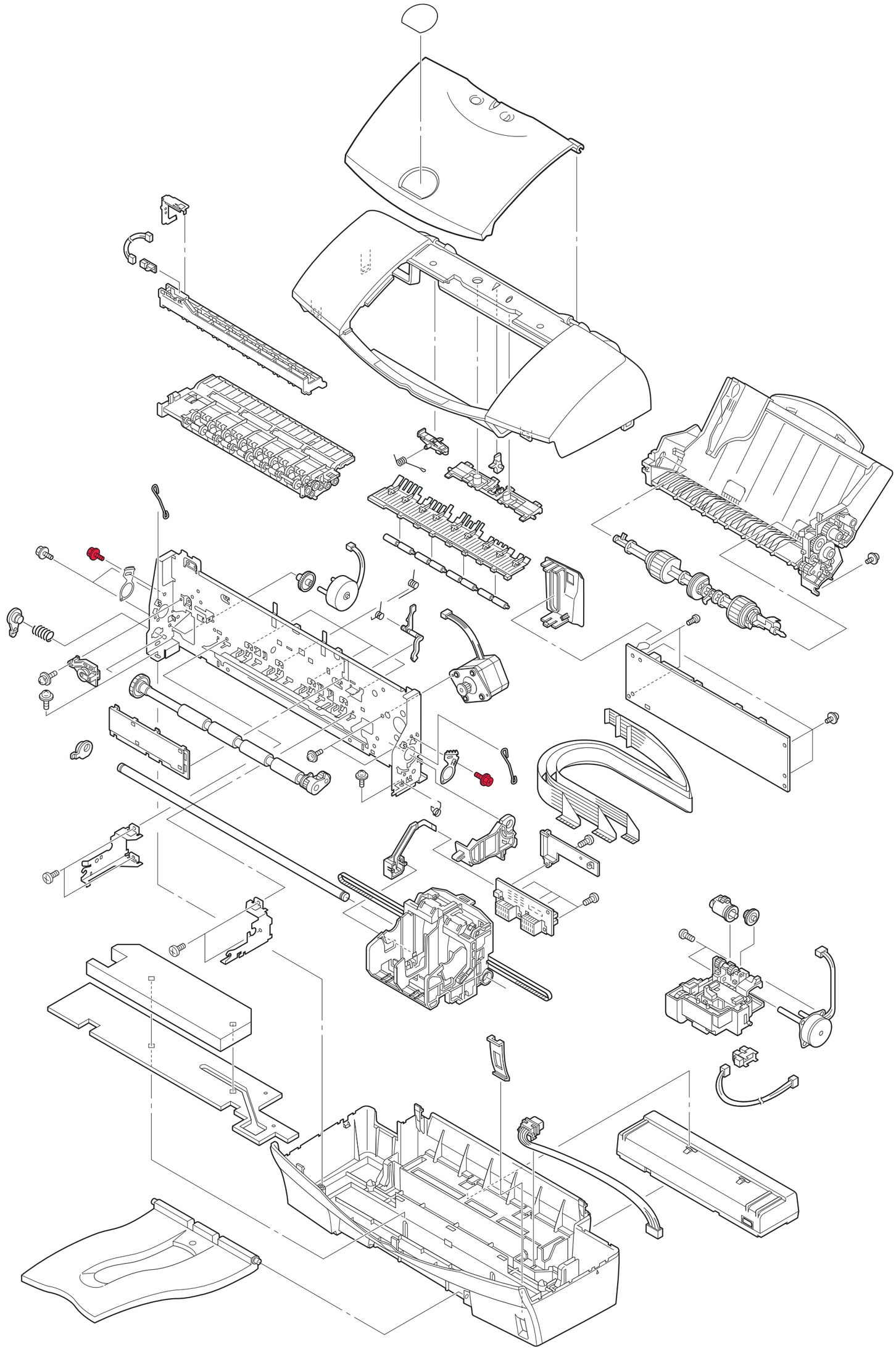


Figure 2-2 Exploded View

3.3 Disassembly and Reassembly

Cautions for disassembling and reassembling the printer are stated below.

As for the disassembly procedure, refer to the *Parts Catalog*. The illustrations in the *Parts Catalog* are numbered according to the order of disassembly.

3.3.1 Carriage lock release

Normally, when a cartridge is installed on the carriage and the power is turned off, the printer moves the carriage to the capping position to lock it.

And when the power is turned on, the carriage lock is normally released. However, if the printer does not operate properly, you can release the carriage lock manually as shown in the illustration below. Remove the cartridge, and while holding down the purge unit's lever, move the carriage to the left. This releases the carriage lock.

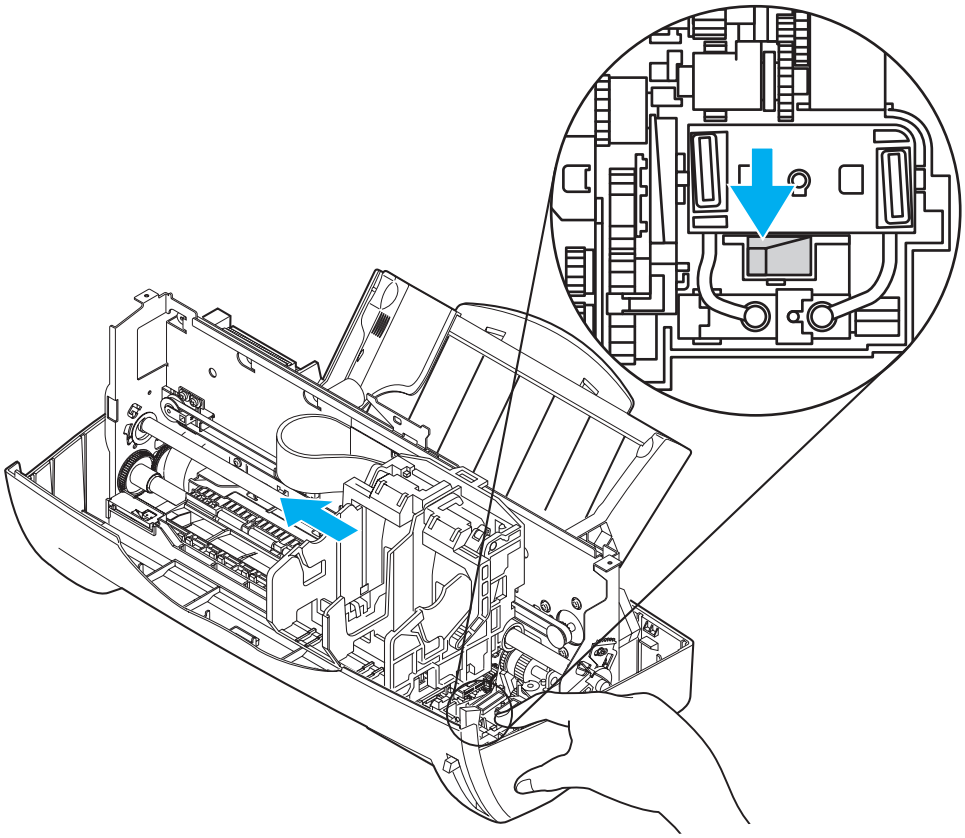


Figure 2-3 Carriage Lock Release

3.3.2 Removing and installing tap screws

The printer uses tap screws to fasten the printer unit and base. The removed tap screws will have residue from the mold in which the internal thread was made. Since the residue may crush the screw threads, clean off the residue from the tap screws before re-installing or use new tap screws.

3.3.3 Removing the upper cover unit

To remove the upper cover unit, see the figure below.

1) Unhook the upper cover unit's four hooks on the sides and back.
2) Unhook the two hooks on the front.

To reinstall, follow this procedure in reverse.

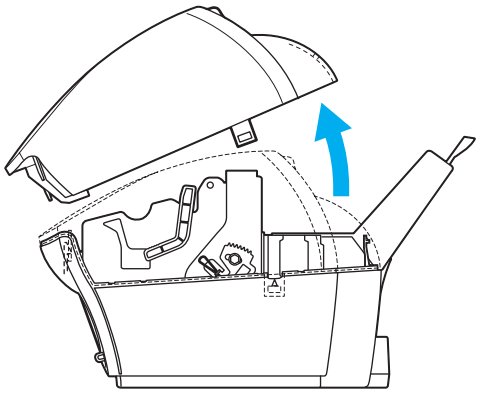


Figure 2-4 Upper Cover Unit Removal and Installation

3.3.4 Removing the printer unit

Remove the printer unit as shown in the figure below.

1) First remove the two screws securing the printer unit and bottom case.
2) Release the bottom case's two hooks at the back of the printer unit. (Arrows 1 and 2)
3) Hold the two handles on the sides of the printer unit and lift up at an angle as shown by arrow 3.

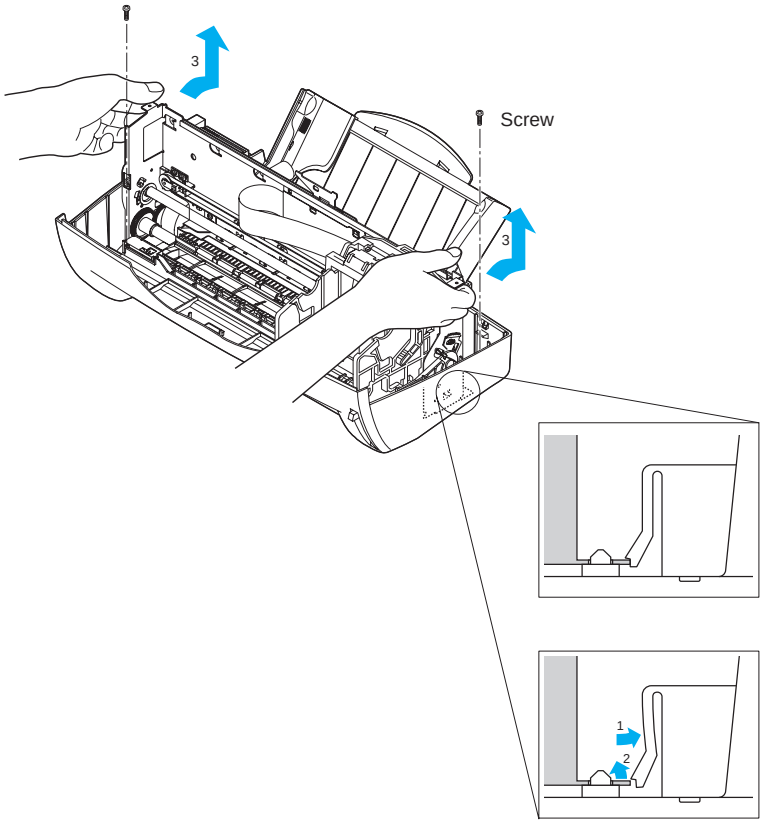


Figure 2-5 Removing the Printer Unit

3.3.5 Removing the pressure roller unit

To remove the pressure roller unit, release the three hooks in turn as shown by the arrows in the figure. Then pull it out from rear of the printer unit.
When releasing the hooks, start with the one on the left (when facing the front of the pressure roller unit). This will make removal easier.

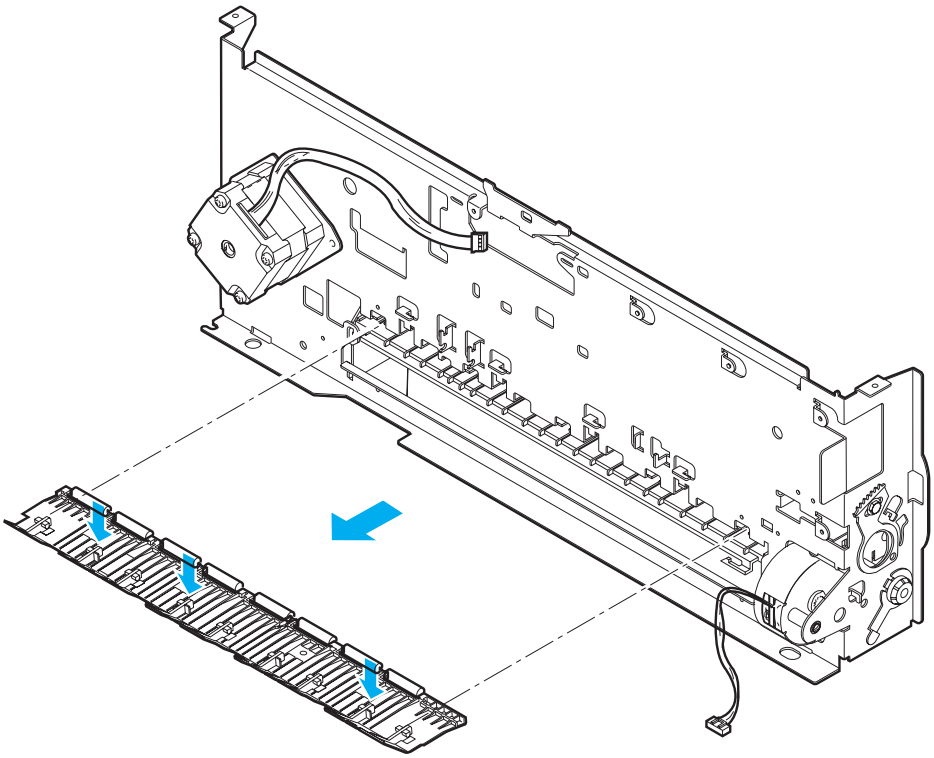


Figure 2-6 Removing the Pressure Roller Unit

3.3.6 Spur positions on the spur base unit

The figure below shows the position of the spurs on the spur base. The side (bottom) where the spurs are installed is shown. If you removed any of the spurs by mistake, use this diagram to install then at the correct position.

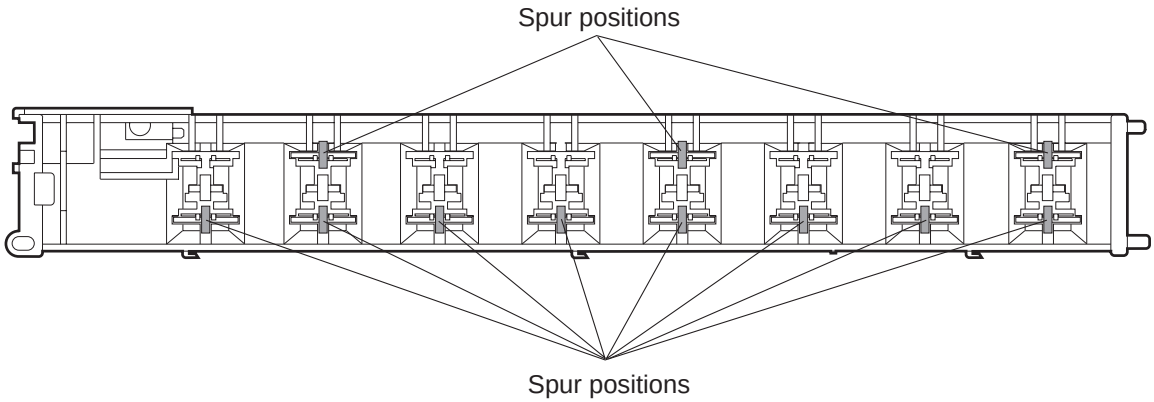


Figure 2-7 Spur Positions on the Spur Base Unit (Bottom View)

3.3.7 Removing the ASF unit

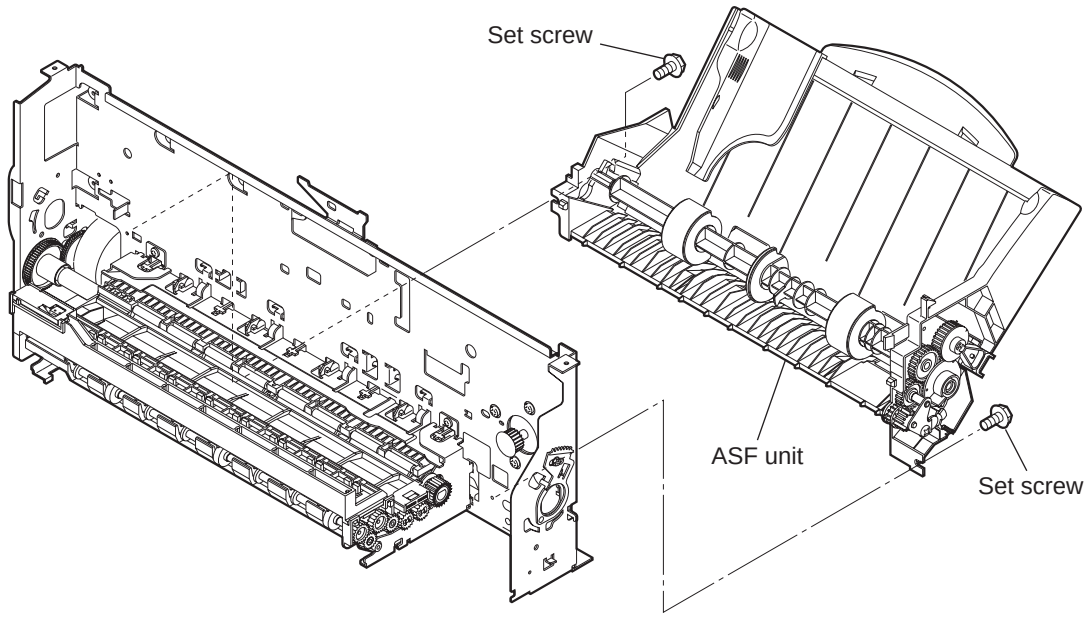


Figure 2-8 Removing the ASF Unit

3.3.8 Removing the head gap adjustment section

Secured to the printer frame, the head gap adjustment plate is for adjusting the gap between the BJ cartridge's nozzles and platen so that the optimum printing quality is obtained.

If the set screw securing the head gap adjustment plate to the printer frame is loosened, the head gap will change and head gap adjustment will be necessary.

The set screw is painted in red to distinguish it from the other screws and to prevent accidental loosening.

If you have loosened it by mistake, do the head gap adjustment as described in *3.4.6 Adjusting the head gap on page 2-21.*

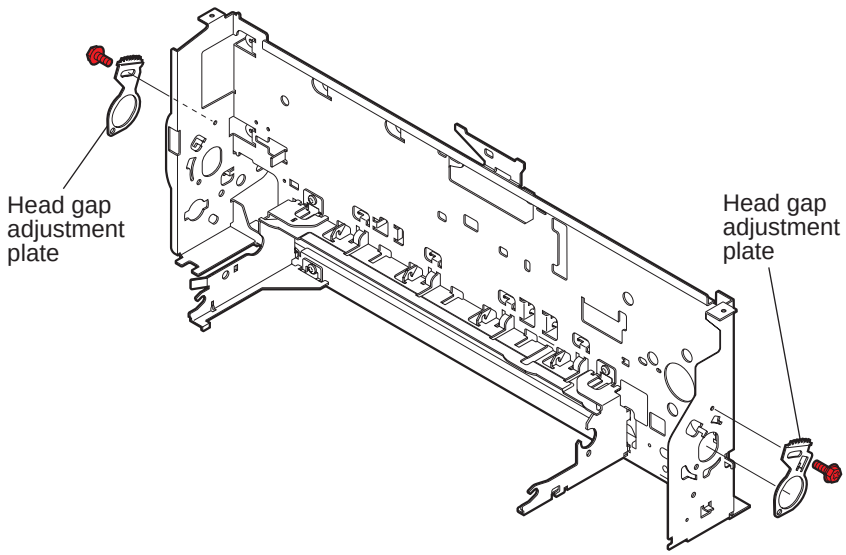


Figure 2-9 Carriage Shaft Position Adjustment Bearing

3.4 Adjustments and Settings After Disassembly and Reassembly

3.4.1 Adjustments

(1) User Level

Timing	Adjustment	Time Required	Tools Required
After BJ cartridge installation/removal	BJ cartridge printing position adjustment	2 min.	2 sheets of B5 or larger paper

(2) Serviceman Level

Timing	Adjustment	Time Required	Tools Required
After idler pulley installation/removal	Belt tension	1 min.	Tension spring (QY9-0043)
After control board replacement or waste-ink absorber replacement	EEPROM setting	1 min.	None
After replacement/disassembly of carriage unit parts	BJ cartridge printing position adjustment	2 min.	2 sheets of B5 or larger paper
After loosening the head gap set screws	Head gap	5 min.	Gap gauge (QY9-0038)
Parts to be greased	See page 2-18	---	Grease PG-641 (CK-0562), Floil 946P, brush

When applying grease, be careful not to get any grease on the wiper and cap.

3.4.2 Applying grease

Apply the correct grease to the places shown below.

Use a flat brush to spread a thin coat of grease.

To disassemble and reassemble the printer, refer to the *Parts Catalog*.

CAUTION

When applying grease, be careful not to get any grease on the wiper and cap.

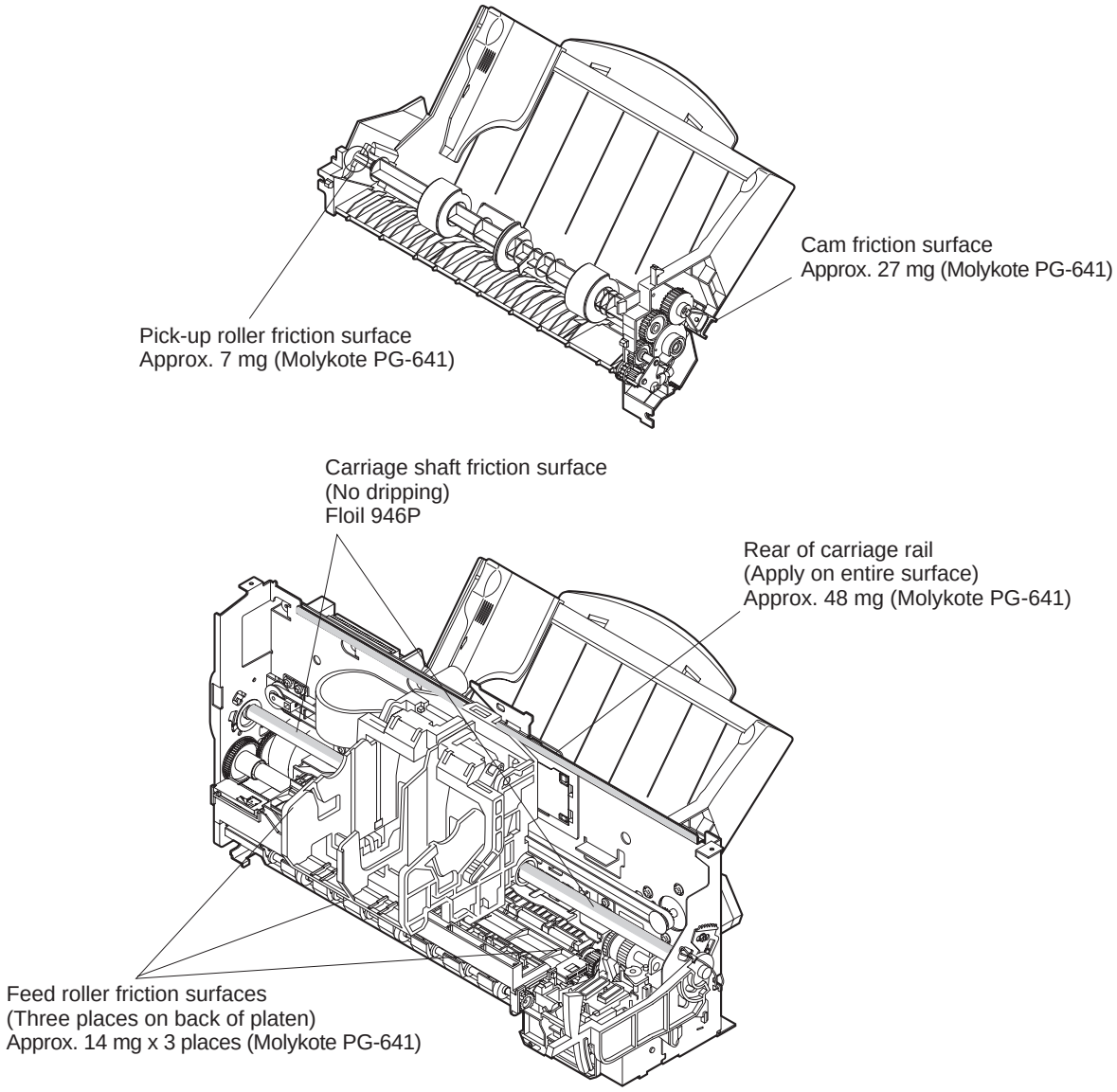

Cam friction surface
Approx. 27 mg (Molykote PG-641)
Pick-up roller friction surface
Approx. 7 mg (Molykote PG-641)
Carriage shaft friction surface
(No dripping)
Floil 946P
Rear of carriage rail
(Apply on entire surface)
Approx. 48 mg (Molykote PG-641)
Feed roller friction surfaces
(Three places on back of platen)
Approx. 14 mg x 3 places (Molykote PG-641)

Figure 2-10 Applying Grease

3.4.3 Print head position adjustment

Since the printer has two BJ cartridges installed, the ejected ink's placement can be thrown off due to the differences in the BJ cartridges and the installation conditions. Less than optimum printing quality will result. To eliminate this misalignment, perform the auto print head position adjustment with the printer driver's utility after installing the BJ cartridges. The print head position can also be adjusted in Service Mode with the printer alone, without using a computer. The procedure is described in *7.1 Service Mode Operations on page 2-28*.

Place one B5 or larger sheet of plain paper in the auto sheet feeder, then start the test printing of the print head position adjustment pattern with the printer driver's utility sheet.

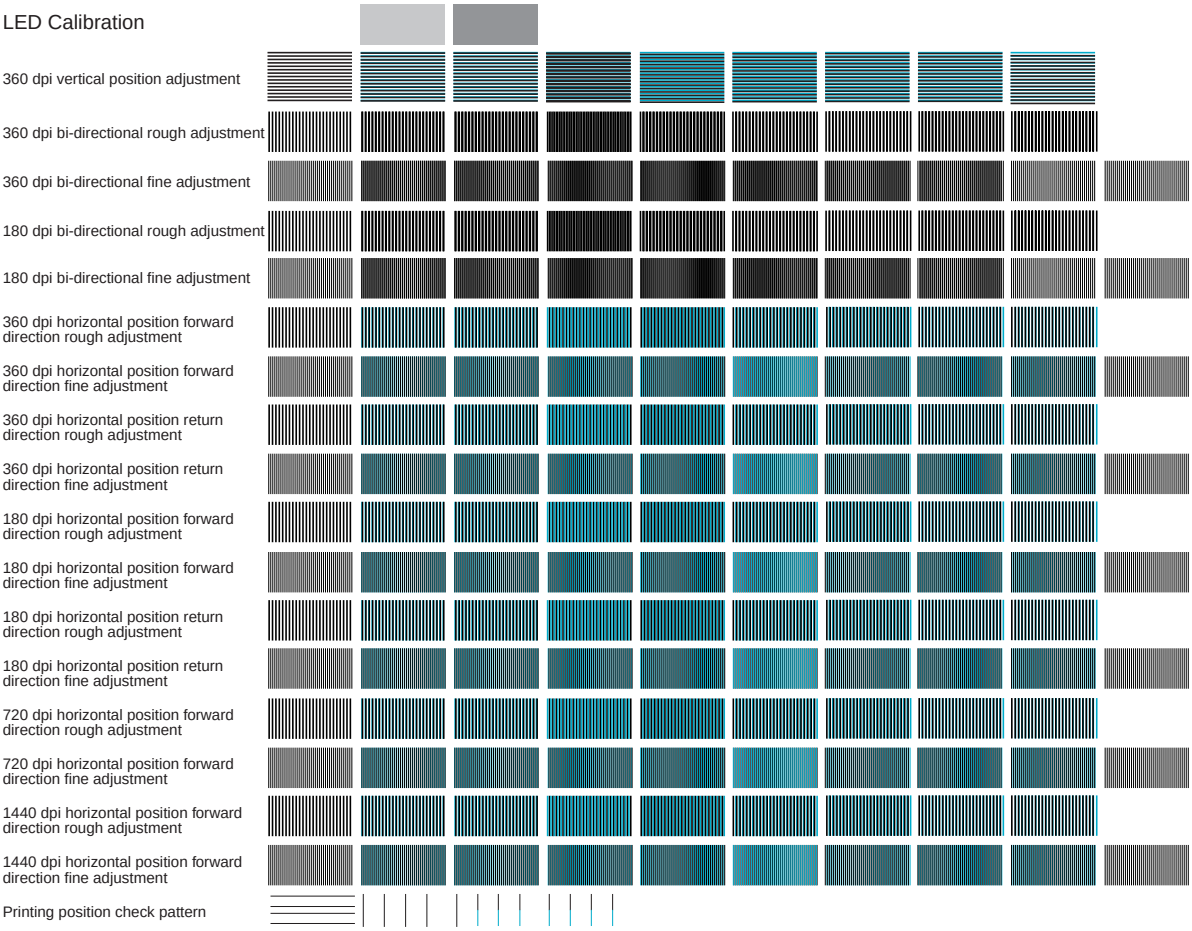

LED Calibration
360 dpi vertical position adjustment
360 dpi bi-directional rough adjustment
360 dpi bi-directional fine adjustment
180 dpi bi-directional rough adjustment
180 dpi bi-directional fine adjustment
360 dpi horizontal position forward direction rough adjustment
360 dpi horizontal position forward direction fine adjustment
360 dpi horizontal position return direction rough adjustment
360 dpi horizontal position return direction fine adjustment
180 dpi horizontal position forward direction rough adjustment
180 dpi horizontal position forward direction fine adjustment
180 dpi horizontal position return direction rough adjustment
180 dpi horizontal position return direction fine adjustment
720 dpi horizontal position forward direction rough adjustment
720 dpi horizontal position forward direction fine adjustment
1440 dpi horizontal position forward direction rough adjustment
1440 dpi horizontal position forward direction fine adjustment
Printing position check pattern

Figure 2-11 Print Position Adjustment Pattern

CAUTION

Printing the nozzle check pattern requires B5 or larger paper. If the paper's width is narrower than the nozzle check pattern, the platen will be printed on and the ink will soil the platen.

3.4.4 Setting the EEPROM

After replacing the control board or waste-ink absorber, reset the EEPROM, set the model settings, and do a test printout to confirm the settings.

The EEPROM (IC502) on the control board stores various printer data such as the waste-ink amount and other printer specific settings.

The procedure is described in *7.1 Service Mode Operations on page 2-28*.

(1) After control board replacement

If the waste-ink absorption amount is over 7 percent at the time you replace the control board, also replace the waste-ink absorber. Then reset the EEPROM and restore the printer settings.

To check the waste-ink absorption amount, you can either check the service/factory text printout from the old control board or visually check the waste-ink absorber's waste-ink absorption amount.

Also, the new control board (EEPROM) data is undefined.

The EEPROM must be reset. Otherwise, the waste-ink full error will not occur, even when the waste-ink absorber's capacity has been exceeded, thereby leaking ink.

(2) After waste-ink absorber replacement

Clear the EEPROM's waste-ink counter.

Once the data in the EEPROM is reset, a test printout cannot be used to confirm the old data. Be sure to print the data before resetting the EEPROM.

The various settings (except the model setting), sheet count, and waste-ink amount will be reset.

The various settings and waste-ink amount stored in the old EEPROM cannot be written to the new (replacement) EEPROM.

The waste-ink full error is expected to occur only when the printer prints more than the number of sheets specified for its service life. However, how soon this error occurs varies depending on how many times the printer has been turned on/off, the number of times the BJ cartridge has been replaced (front cover open/closing), and the operating environment.

3.4.5 Adjusting the carriage belt tension

If the carriage belt tension has been loosened to remove the carriage, etc., adjust the carriage belt tension. When securing the pulley assembly, use the tension spring (QY9-0043) and tighten the screws. After tightening the screws, remove the tension spring.

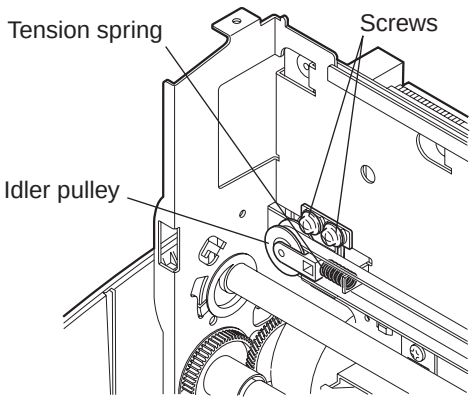


Figure 2-12 Carriage Belt Tension Adjustment

3.4.6 Adjusting the head gap

If the set screws securing the head gap adjustment plate to the printer frame are loosened or removed, the head gap adjustment will be necessary.

Preparation

1) Remove the upper cover unit and bottom case. (Or, reassemble the printer so that the upper cover unit and bottom case are to be attached next.)
2) Remove the paper thickness lever spring and the left and right shaft clips, then attach the bottom case.
3) Loosen the red set screws on both sides of the printer chassis by a half rotation from the fully tightened position.
4) Set the paper thickness lever to the down position (for thick paper).

CAUTION

Before doing the adjustment, make sure the gap gauge is not deformed and that no foreign matter is adhering to it or to the platen.

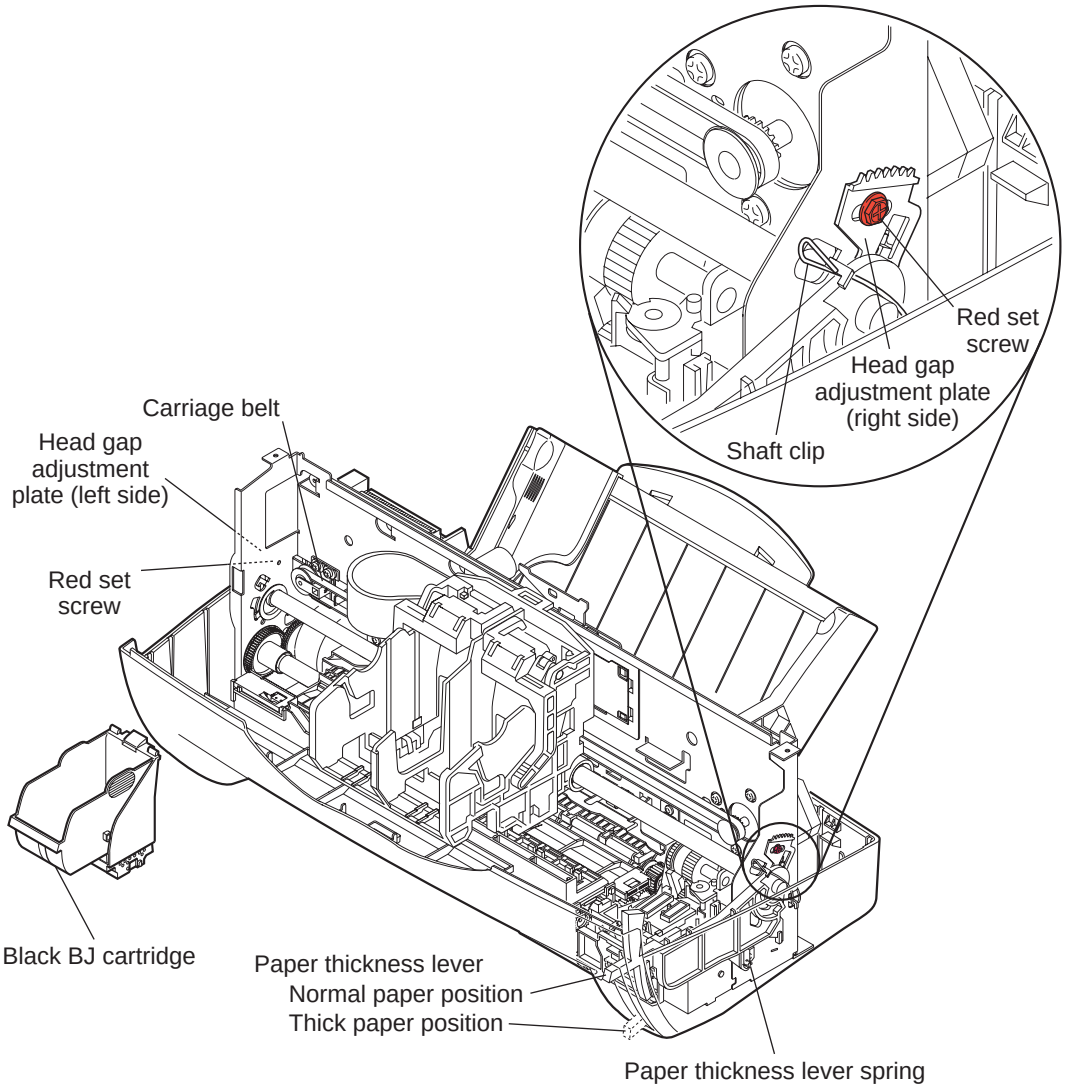


Figure 2-13 Head Gap Adjustment 1

Adjustment Procedure

1) Set the gap gauge (QY9-0038) to position A1.
2) Move the carriage belt by hand so that the carriage goes to position A2. Align the bottom case's rib with the carriage's right end.
3) Install a black BJ cartridge without ink tank in the carriage.
4) Move the paper thickness lever up and down two or three times, then, while holding the lever in the normal paper (up) position, tighten the red set screw on the right end.
5) Remove the black BJ cartridge.
6) Place the gap gauge at position B1.
7) Set the paper thickness lever to the thick paper (down) position.
8) Move the carriage belt by hand so that the carriage goes to position B2. Align the ink sensor's edge with the carriage's left end.
9) Install a black BJ cartridge without ink tank in the carriage.
10) Move the paper thickness lever up and down two or three times, then while holding the lever in the normal paper (up) position, tighten the red set screw on the left end.
11) Remove the black BJ cartridge.
12) Loosen the red set screw on the right end by a half turn. Then repeat steps 1) to 5) to complete the adjustment.

Remove the bottom case and attach the paper thickness lever spring and the left and right shaft clips.

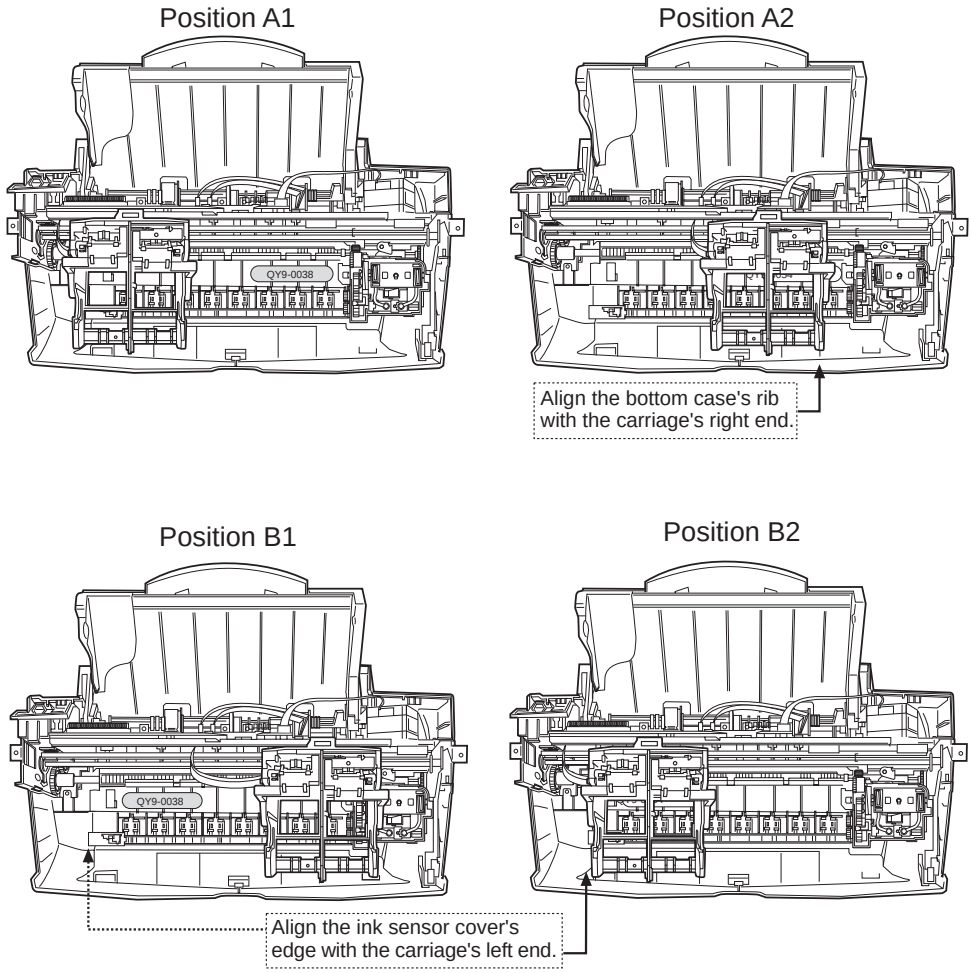


Figure 2-14 Head Gap Adjustment 2

4. OPERATION CHECK AFTER DISASSEMBLY AND REASSEMBLY

4.1 Check Procedure

After disassembly and reassembly, follow the procedure below to check the printer's operation.

1) After service/factory test printout with the printer alone

Check that the printer can print properly. The procedure is described in *7.1 Service Mode Operations on page 2-28*.

After replacing the control board or the ink absorber, the following check procedure is also necessary in addition to 1) above.

After control board replacement	The service/factory test printout must show the correct ROM version and model designation. It must also show the printed sheet count and that the total waste-ink amount has been cleared. The printer driver must be able to print the nozzle check pattern.
After waste ink absorber replacement	The service/factory test printout must show that the total waste-ink amount has been cleared.

5. TRANSPORTING THE PRINTER

Before moving or transporting the printer, put one BJ cartridge (with the ink tank installed) in the cartridge container. This is to prevent the ink from leaking and the BJ cartridge's ink nozzles from drying up.
Before returning the repaired printer back to the customer, move the carriage to the cartridge replacement position and tape it at that position.

5.1 Preparation for Transport

When transporting the printer, follow the procedure below.

1) With the printer turned on, open the front cover and move the carriage to the cartridge replacement position.
2) Remove one cartridge from the carriage and put it in the cartridge container.
3) Turn off the printer by pressing the *POWER* button.
4) Then, from Service Mode, conduct the power off/carriage lock procedure.
   For details, refer to *7.1 Service Mode Operations on page 2-28*.
5) Disconnect the interface cable (s).
6) Disconnect the AC plug from the power outlet.
7) Close the front cover.
8) Pack the printer in its original packaging. If you do not have the original packaging, use sufficient cushioning material when packing the printer.

6. PARTS REPLACEMENT, PERIODIC INSPECTIONS, & TOOLS

6.1 Parts Replacement

Level	Periodically Replaced Parts
User	None
Serviceman	None

Level	Consumables
User	Black BJ cartridge: BC-30 Color BJ cartridge: BC-31 Photo BJ cartridge: BC-32 Black BJ cartridge ink tank (Black: BCI-3BK) Color BJ cartridge ink tank (Black: BCI-3BK, Cyan: BCI-3C, Magenta: BCI-3M, Yellow: BCI-3Y) Photo BJ cartridge ink tank (Black: BCI-3BK Photo, Cyan: BCI-3C Photo, Magenta: BCI-3M Photo)
Serviceman	None

6.2 Periodic Inspections

Level	Periodic Inspections
User	None
Serviceman	None

6.3 Tool List

Ordinary Tools	Remarks
Phillips screwdriver	For the removal and installation of screws.
Blade screwdriver	For the removal of plastic parts.
Needle-nosed pliers	For the removal and installation of springs.
Tweezers	For the disconnection and connection of flexible cables, etc.
Flat brush	For applying grease.
Multi-meter	For troubleshooting.

Special Tools (Part No.)	Remarks
Gap gauge 2.3 mm (QY9-0054-000)	For Head gap adjustment (see *Figure 2-14 on page 2-22*). Use 1.
Tension spring (QY9-0043-000)	For carriage belt tension adjustment (see *Figure 2-12 on page 2-20*).
Grease Molykote PG-641 (CK-0562-000)	To be applied on the specified parts (see *Figure 2-10 on page 2-18*).
Grease FLOIL 946P (QY9-0045-000)	To be applied on the specified parts (see *Figure 2-10 on page 2-18*).

6.4 Operation with the Printer's Operation Panel

The printer can be operated in the offline operation mode, with the power turned on and without connection to a computer.

With the printer turned on, you can start various printer operations by holding down the *RESUME* button and releasing after the green indicator blinks the stipulated number of times.

Operation	Indicator Blinking	Remarks
Cleaning	1 time	---
Nozzle check pattern printout	2 times	Stops after 1 sheet is printed.
Roller cleaning	3 times	Passes one cleaning sheet through.
---	4 times	No operation executed.

6.4.1 Cleaning

With the printer turned on, hold down the *RESUME* button and release after the green indicator blinks once. The cleaning will then start. Cleaning can also be performed from the printer driver's utility, while connected to a computer.

6.4.2 Printing the nozzle check pattern

With the printer turned on, hold down the *RESUME* button and release after the green indicator blinks twice. The printer will then start printing the nozzle check pattern. If any printing defects appear in the test printout, clean the BJ cartridges. If printing defects persist even after cleaning the BJ cartridges five times or more, replace the BJ cartridges.

Printing the nozzle check pattern requires B5 or larger paper. If the paper's width is narrower than the nozzle check pattern, the platen will be printed on and the ink will soil the platen.

To stop the printing of the test pattern midway, press the *POWER* button.
The printing will stop and the sheet will be discharged.
Then the printer will turn off.

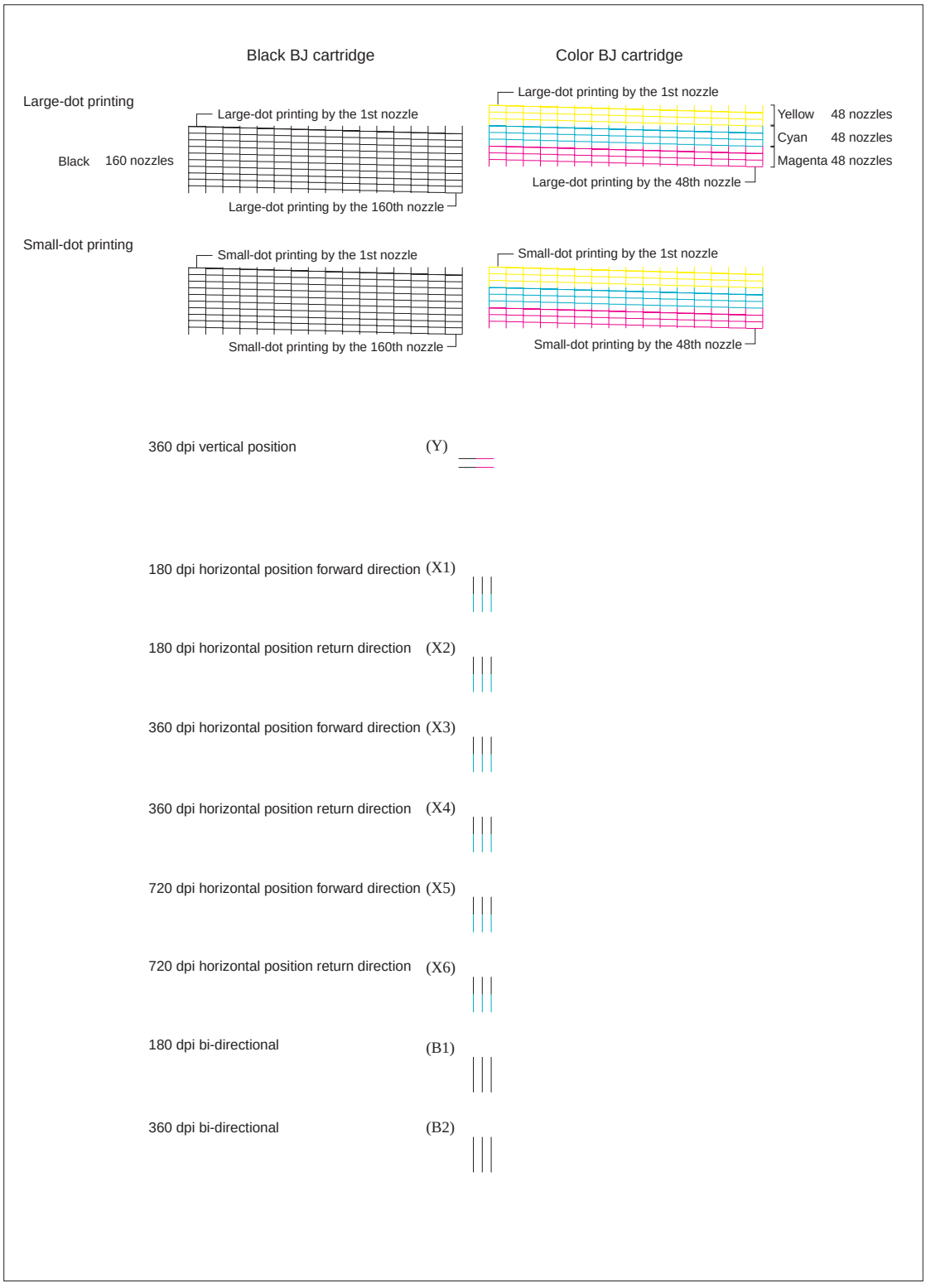

Black BJ cartridge
Color BJ cartridge
Large-dot printing
Large-dot printing by the 1st nozzle
Black 160 nozzles
Large-dot printing by the 160th nozzle
Large-dot printing by the 1st nozzle
Yellow 48 nozzles
Cyan 48 nozzles
Magenta 48 nozzles
Large-dot printing by the 48th nozzle
Small-dot printing
Small-dot printing by the 1st nozzle
Small-dot printing by the 160th nozzle
Small-dot printing by the 1st nozzle
Small-dot printing by the 48th nozzle
360 dpi vertical position (Y)
180 dpi horizontal position forward direction (X1)
180 dpi horizontal position return direction (X2)
360 dpi horizontal position forward direction (X3)
360 dpi horizontal position return direction (X4)
720 dpi horizontal position forward direction (X5)
720 dpi horizontal position return direction (X6)
180 dpi bi-directional (B1)
360 dpi bi-directional (B2)

Figure 2-15 Nozzle Check Pattern Printout (Color Sample)

6.4.3 Roller cleaning

With the printer turned on, hold down the *RESUME* button and release after the green indicator blinks three times. The roller cleaning will then start. The cleaning sheet placed in the auto sheet feeder will be sent through, and the paper fibers, etc., will be cleaned from the pick-up rollers and paper feed rollers.

7. SERVICE-RELATED FEATURES

The printer has a Service Mode for accessing service settings and executing test printouts. The operations can be selected via the operation panel buttons.

7.1 Service Mode Operations

1) With the printer turned off, hold down the *RESUME* button and press and hold the *POWER* button (the green indicator lights).
2) While holding down *POWER* button, release the *RESUME* button and then press the *RESUME* button twice in succession. Then release both the *RESUME* button and *POWER* button.
(Each time the *RESUME* button is pressed, the indicator's color toggles between orange and green.)
3) During the printer initialization, the green indicator blinks. When the green indicator stops blinking and lights on, press the *RESUME* button the stipulated number of times to execute the desired operation listed below.
(Each time the *RESUME* button is pressed, the indicator's color toggles between orange and green.)

Press	Indicator	Function
0 times	Lights in green	Service/factory test printout
1 time	Lights in orange	EEPROM information printout
2 times	Lights in green	EEPROM initialization (All the information will be reset to the default, except for the model setting.)
3 times	Lights in orange	Clears the waste-ink counter
4 times	Lights in green	Model setting*: The setting procedure is described below.
5 times	Lights in orange	Ink availability check and print
6 times	Lights in green	Auto print head position adjustment
7 times or more	Lights in orange	Power off/Carriage lock

4) After making the selection, press the *POWER* button. The green indicator lights and the function will be executed.
(After the function is executed, the printer will power off.)

* After selecting model setting, press the *RESUME* button the number of times indicated below to set the product type.
(During the initialization, the green indicator blinks. Each time the *RESUME* button is pressed, the indicator's color toggles between orange and green.)

Press	Indicator	Function
0 times	Lights in green	BJ F620 (Japan)
1 time	Lights in orange	BJC-6200 (All other countries)
2 times or more	---	Saved as a reserved area where the setting will not be rewritten.

After selecting the model, press the *POWER* button to finalize the setting.
(After the printer executes the function, it will turn off.)

Before entering the service mode, install the BJ cartridges. The service mode cannot be executed without the cartridges installed.
After setting the model, confirm the setting with the service/factory test printout.

7.2 Service/Factory Test Printout

The header of the service/factory test printout shows the control ROM version, model setting, total printed sheet count, total waste-ink absorption amount, and other information.

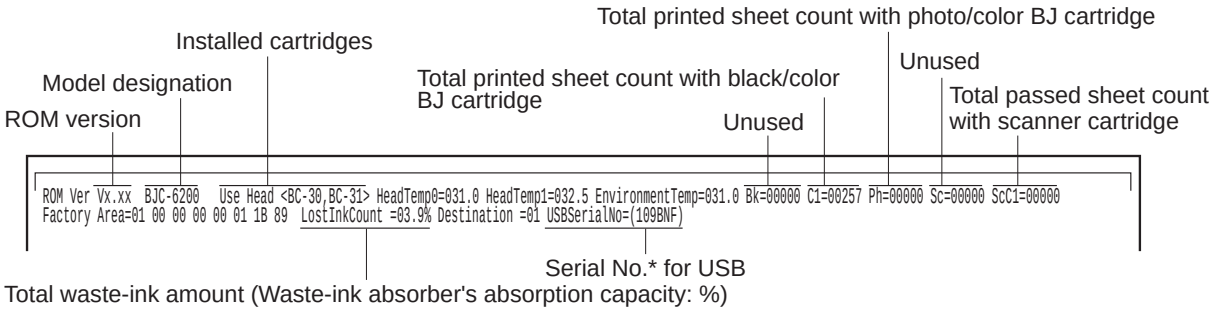

Total printed sheet count with photo/color BJ cartridge
Installed cartridges
Unused
Model designation
Total printed sheet count with black/color BJ cartridge
Total passed sheet count with scanner cartridge
ROM version
Unused
ROM Ver Vx.xx BJC-6200 Use Head <BC-30,BC-31> HeadTemp0=031.0 HeadTemp1=032.5 EnvironmentTemp=031.0 Bk=00000 C1=00257 Ph=00000 Sc=00000 ScC1=00000
Factory Area=01 00 00 00 00 01 1B 89 LostInkCount =03.9% Destination =01 USBSerialNo=(109BNF)
Serial No.* for USB
Total waste-ink amount (Waste-ink absorber's absorption capacity: %)

Figure 2-16 Service/Factory Test Printout (Sample)

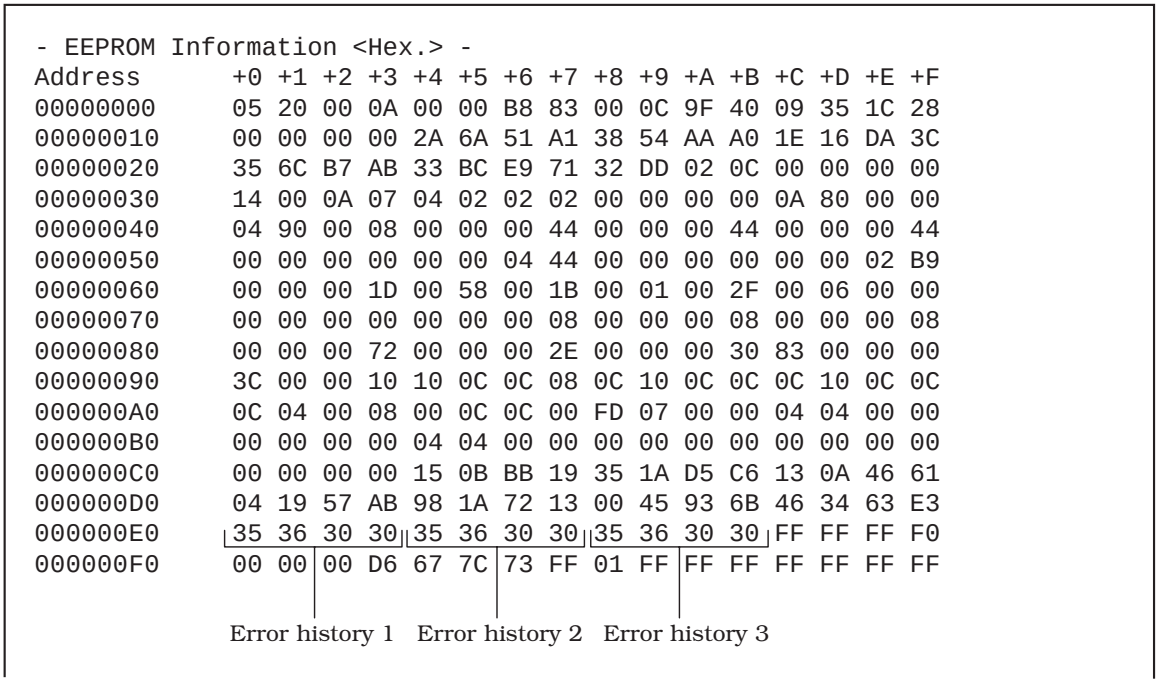
* USB serial No.

If multiple BJS-6200 printers are connected via USB, each printer will have a unique USB serial No. (in accordance with USB standards) so that the computer can distinguish between them.

The unique USB serial No. is written in the EEPROM when the control board is manufactured. The USB serial No. written in the EEPROM is not cleared even when the EEPROM is reset. Also, the USB serial No. cannot be modified.

7.3 Printing the EEPROM Information

The EEPROM stores information such as the various settings; the total printed sheet count of the black, color, and photo BJ cartridges and scanner cartridge; the total waste-ink absorption amount; and the error history of the last three non user-recoverable errors. The information stored in the EEPROM is printed in the hexadecimal dump format in the EEPROM information printout. The EEPROM information serves as a general guide to how much the printer has been used.



```
- EEPROM Information <Hex.> -
Address      +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F
00000000     05 20 00 0A 00 00 B8 83 00 0C 9F 40 09 35 1C 28
00000010     00 00 00 00 2A 6A 51 A1 38 54 AA A0 1E 16 DA 3C
00000020     35 6C B7 AB 33 BC E9 71 32 DD 02 0C 00 00 00 00
00000030     14 00 0A 07 04 02 02 02 00 00 00 00 0A 80 00 00
00000040     04 90 00 08 00 00 00 44 00 00 00 44 00 00 00 44
00000050     00 00 00 00 00 00 04 44 00 00 00 00 00 00 02 B9
00000060     00 00 00 1D 00 58 00 1B 00 01 00 2F 00 06 00 00
00000070     00 00 00 00 00 00 00 08 00 00 00 08 00 00 00 08
00000080     00 00 00 72 00 00 00 2E 00 00 00 30 83 00 00 00
00000090     3C 00 00 10 10 0C 0C 08 0C 10 0C 0C 0C 10 0C 0C
000000A0     0C 04 00 08 00 0C 0C 00 FD 07 00 00 04 04 00 00
000000B0     00 00 00 00 04 04 00 00 00 00 00 00 00 00 00 00
000000C0     00 00 00 00 15 0B BB 19 35 1A D5 C6 13 0A 46 61
000000D0     04 19 57 AB 98 1A 72 13 00 45 93 6B 46 34 63 E3
000000E0     35 36 30 30 35 36 30 30 35 36 30 30 FF FF FF F0
000000F0     00 00 00 D6 67 7C 73 FF 01 FF FF FF FF FF FF FF

             Error history 1  Error history 2  Error history 3
```

Figure 2-17 EEPROM Information Printout (Sample)

The error history records the last three (starting with the most recent one) non user-recoverable errors that have occurred. It does not include ROM/RAM errors. The error codes are shown in ASCII format.

Error	Error Code	ASCII Code
Carriage error	5100	35 31 30 30
Abnormal head temperature	5200	35 32 30 30
Scanner cartridge error	5210	35 32 31 30
Abnormal internal temperature error	5400	35 34 30 30
No head error (in operation)	5600	35 36 30 30
ASF sensor error	5700	35 37 30 30
Ink sensor error	5910	35 39 31 30
Waste-ink full error	5B00	35 42 30 30
Pump sensor error	5C00	35 43 30 30
EEPROM Read/Write error	6800	36 38 30 30

7.4 Resetting the EEPROM

The EEPROM stores information such as the various settings; the total printed sheet count of the black, color, and photo BJ cartridges and scanner cartridge; the total waste-ink absorption amount; and the error history of the last three non user-recoverable errors. The printer uses the total waste-ink absorption amount recorded by the EEPROM as the basis for determining whether the waste ink is full. Therefore, after replacing the waste-ink absorber, be sure to reset the EEPROM's total waste-ink absorption amount.
Also, after replacing the control board, be sure to reset the new control board's EEPROM and to also replace the waste-ink absorber.

7.5 Setting the Model with the EEPROM

The control board used in the BJC-6200 is also used in other printers. After replacing the control board, the default information for the respective printer must be set.
After setting the model, confirm it with the service/factory test printout.

7.6 Ink Availability Check

When this function is selected, the printer scans the carriage to check for ink in the ink tank's ink compartments. The result is printed out.
Whether the ink sensor is working properly can be confirmed by:
(1) Installing an empty ink tank in the BJ cartridge.
(2) Using this Service Mode function and print out the results.
(3) Checking that the "ExistInk" value is 0 (indicating an empty ink tank).

7.7 Auto Print Head Position Adjustment

The print head position can be adjusted with the printer alone, without connection to a computer. The adjustment is the same as when the user executes the auto printing position adjustment via the computer.
For details on the head printing position adjustment, see *3.4.3 Print head position adjustment on page 2-19*.

7.8 Power Off/Carriage Lock

When this function is selected, the printer moves the carriage (whether BJ cartridges are installed or not) to the home position and locks the carriage. Then the power turns off.

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Part 3

APPENDIX

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1. TECHNICAL REFERENCE

1.1 Print Mode List

The print mode list for the black, color, and photo BJ cartridges is shown below.

By setting the printer driver's "Dithering," "Paper Type," and "Printing Quality" settings, the printer will operate in the printing modes below.

Table 3-1 PRINT MODE LIST

Black/Color Cartridge

Dithering	Paper Type	Printing Quality				
		High-speed	Standard (Faster Speed)	Standard (Higher Quality)	High Quality	Highest Quality
		180 × 180 L/R	360 × 360 L/R	360 × 360 L/S/R	720 × 720 S/R	1440 × 720 S/R
Error Dispersion	Plain paper	---	1 pass/bi-directional	2 passes/uni-directional	4 passes/uni-directional	---
	High quality	---	2 passes/bi-directional	3 passes/uni-directional (4 passes)	4 passes/uni-directional	4 passes/uni-directional
	Glossy	---	---	4 passes/uni-directional	6 passes/uni-directional (8 passes)	6 passes/uni-directional (8 passes)
	Glossy film	---	---	4 passes/uni-directional	6 passes/uni-directional (8 passes)	---
	Photo card	---	---	3 passes/uni-directional	4 passes/uni-directional	4 passes/uni-directional
	T-shirt transfer	---	---	6 passes/uni-directional	---	---
	Back print film	---	---	6 passes/uni-directional L/L	---	---
	Transparency	---	2 passes/uni-directional	4 passes/uni-directional L/L	---	---
	Envelope	---	1 passes/uni-directional	3 passes/uni-directional (4 passes)	4 passes/uni-directional	---
Pattern	Plain paper	1 pass/bi-directional	1 pass/bi-directional	---	---	---
	High quality	---	2 passes/bi-directional	---	---	---
	Envelope	---	1 pass/uni-directional	---	---	---
Pattern (High speed)	Plain paper	1 pass/bi-directional	1 pass/bi-directional	---	---	---
	High quality	---	2 passes/bi-directional	---	---	---
Auto	Plain paper	1 pass/bi-directional	1 pass/bi-directional	---	---	---
	High quality	---	2 passes/bi-directional	---	---	---

Photo/Color Cartridge

Dithering	Paper Type	Printing Quality				
		High-speed	Standard (Faster Speed)	Standard (Higher Quality)	High Quality	Highest Quality
		180 × 180 L/R	360 × 360 L/R	360 × 360 L/L/R	360 × 360 L/S/P	720 × 720 S/P
Error Dispersion	Plain paper	---	1 pass/bi-directional	---	2 passes/uni-directional	4 passes/uni-directional
	High quality	---	2 passes/bi-directional	---	3 passes/uni-directional	4 passes/uni-directional
	Glossy	---	---	---	4 passes/uni-directional	6 passes/uni-directional
	Glossy film	---	---	---	4 passes/uni-directional	6 passes/uni-directional
	Photo card	---	---	---	3 passes/uni-directional	4 passes/uni-directional
	T-shirt transfer	---	---	6 passes/uni-directional	---	---
	Back print film	---	---	6 passes/uni-directional	---	---
	Transparency	---	2 passes/uni-directional	4 passes/uni-directional	---	---
	Envelope	---	1 pass/uni-directional	---	3 passes/uni-directional	4 passes/uni-directional
Pattern	Plain paper	1 pass/bi-directional	1 pass/bi-directional	---	---	---
	High quality	---	2 passes/bi-directional	---	---	---
	Postcard	---	1 pass/uni-directional	---	---	---
	Envelope	---	1 pass/uni-directional	---	---	---

Note 1: R and P indicate the ink used for printing. R is color inks (4 colors), and P is the photo inks (6 colors).

Note 2: L (large) and S (small) indicate the ink's dot size for multi-drop printing.

Note 3: The table also indicates the number of passes and the printing direction. If the number of passes differ in the gray scale mode, it is indicated in parentheses.

1.2 Purge Unit's Capping and Cleaning Functions

Capping is executed at the following times:

- When the power is turned off with the *POWER* button.
- When uncapped and print signals have not been received within the stipulated time during standby.
  - During paper feeding: After 20 min.
  - Other times: After 30 sec.
- After the front cover has been left open for 10 minutes.

Cleaning is executed at the times listed in the table below.
As ink suction is performed on both BJ cartridges simultaneously, ink suction for only one BJ cartridge is not possible.

Table 3-2 INK CONSUMPTION DURING CLEANING (GENERAL GUIDE)

Printer Status	Ink Consumption (approx. mg)			
	Black	Color	Photo	Color
Print head refreshing via the printer driver.	0.39	0.53	0.52	0.72
Cleaning executed via the printer driver.	0.20	0.27	0.30	0.41
Operation executed via printer's button.	0.20	0.27	0.30	0.41
72 hours or more elapsed since the last cleaning.	0.20	0.27	0.30	0.41
The printed dot count exceeds the stipulated dot count.	0.20	0.27	0.30	0.41
Before a banner is printed (the dot count since the last cleaning exceeds the stipulated dot count, or the time since the last cleaning exceeds the stipulated time).	0.20	0.27	0.30	0.41
Power is turned on (for the first time).	0.58	0.79	0.77	1.07
Power is turned on (uncapped after AC connection).	0.39	0.53	0.52	0.72
* Power is turned on (capped after AC connection).	0.20	0.27	0.30	0.41
* At replacement of the BJ cartridge or ink tank.	0.39	0.53	0.52	0.72

* In this case, cleaning is not immediately executed. Cleaning is executed the next time any of following is executed: Printing starts, soft power on, paper feeding, paper ejection. (Reason: When the preconditions for cleaning overlap, delaying the cleaning results in the cleaning being executed only once, reducing ink consumption.)

1.3 Cautions About the Inks

Although the inks do not contain any substances harmful to humans, they do contain organic solvents.

1) Black ink

Contains glycerin 56-81-5 and diethylene glycol 111-46-6.

2) Yellow ink

Contains glycerin 56-81-5 and isopropyl alcohol 67-63-0.

3) Cyan, magenta, photo cyan, photo magenta, photo black inks

Contain glycerin 56-81-5, isopropyl alcohol 67-63-0, ethylene glycol 107-21-1, and diethylene glycol 111-46-6.

Do not consume the inks or get it into your eyes.
Should ink get into your eyes, rinse with lots of water and consult a doctor.
Should a large amount of ink be consumed by mistake, promptly see a doctor.
Since the inks contain pigments, they will permanently stain clothing.

1.4 Operation with a Computer

You can set the printer's functions via the dedicated printer driver.

1.4.1 Setting functions with the printer driver

You can use the dedicated printer driver's utilities to set or execute the following:

1) Cleaning
2) Head refreshing
3) Pick-up roller cleaning
4) Nozzle check pattern printout
5) Print head position adjustment
6) Printer power off
7) Automatic power setting
8) Status monitor startup
9) Special settings

• Set the printer to ECP mode (Factory default: Disabled)
• High-speed printing (Factory default: Enabled): Sets the printer's response time (ACKNLG) from 4 ms to 0.9 ms.
• Pause page (Factory default: Disabled)
• Pause scan (Factory default: Disabled)
• Execute automatic head position adjustment after BJ cartridge replacement (Factory default: Disabled)
• Adjust head position manually (Factory default: Disabled)

<<Special Menu for Users (User or Service Mode)>>

The Special Menu for users can be accessed by holding down the Shift key and clicking the Custom Settings button.

• Economy Cleaning (Factory default: Disabled)
The cleaning operations after the AC power is connected and the power turned on for the first time is disabled. When the printer is being repaired or when it turns on in tandem with the computer turning on, the subsequent ink consumption can be reduced. However, this function is disabled if the power is turned on and over 72 hours elapse after the AC power supply is active.
• Prevent inter-sheet ink transfer (Factory default: Disabled)
The ink transfer control prevents ink smearing caused by paper chafing during paper discharge when the black BJ cartridge is used for high-duty printing on plain paper. This ink transfer control can be disabled. The discharged printed sheets can be removed individually to prevent lower throughput.

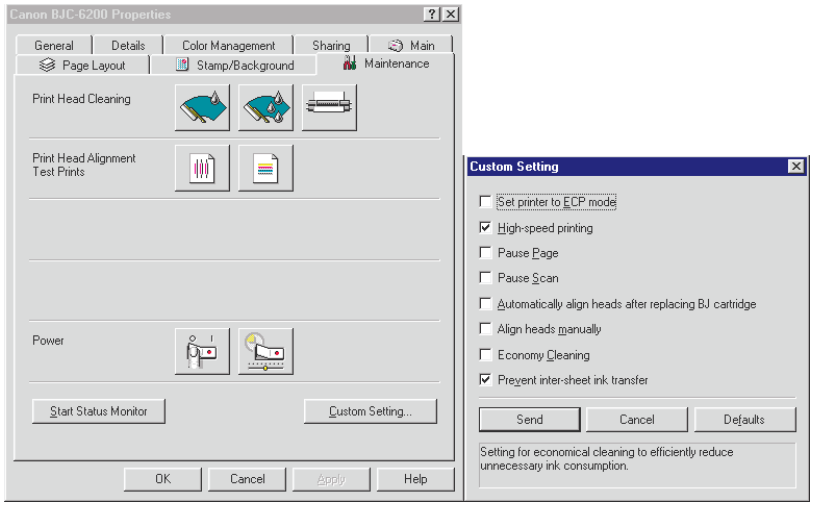

Figure 3-1 Printer Driver Utilities (Sample)

1.5 Detection Functions by Sensors

The printer has the following sensors to detect the printer's operating status.

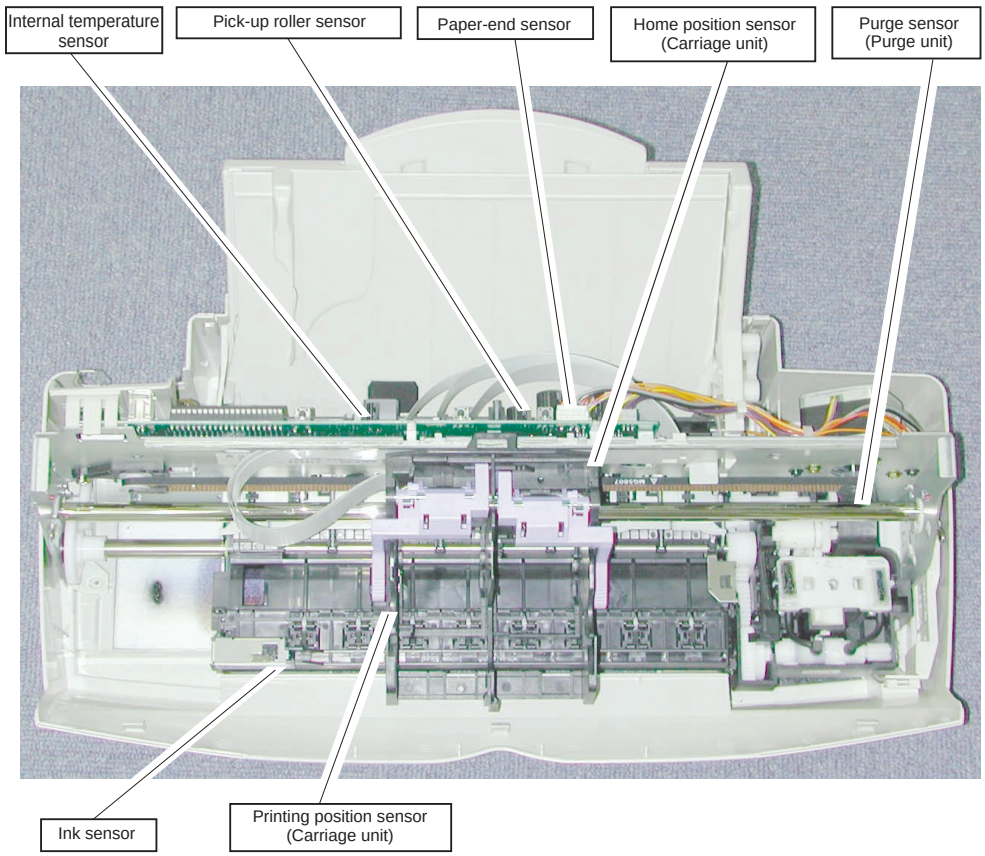

Figure 3-2 Sensor Locations

1.6 Electronic Circuit Description

1.6.1 Circuit block diagram

A block diagram of the printer's electronic circuit comprising the control board and carriage board is shown below.

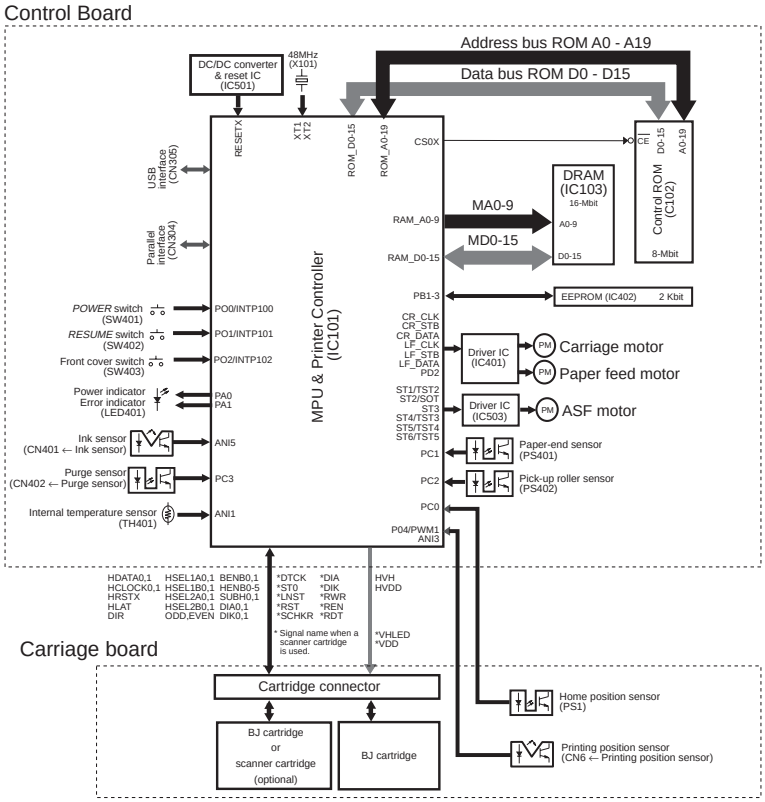

Figure 3-3 Block Diagram

1.6.2 Power source line block diagram

The printer uses an internal power voltage of 5 V/24 V/3.3 V. The power source line's block diagram is shown below.

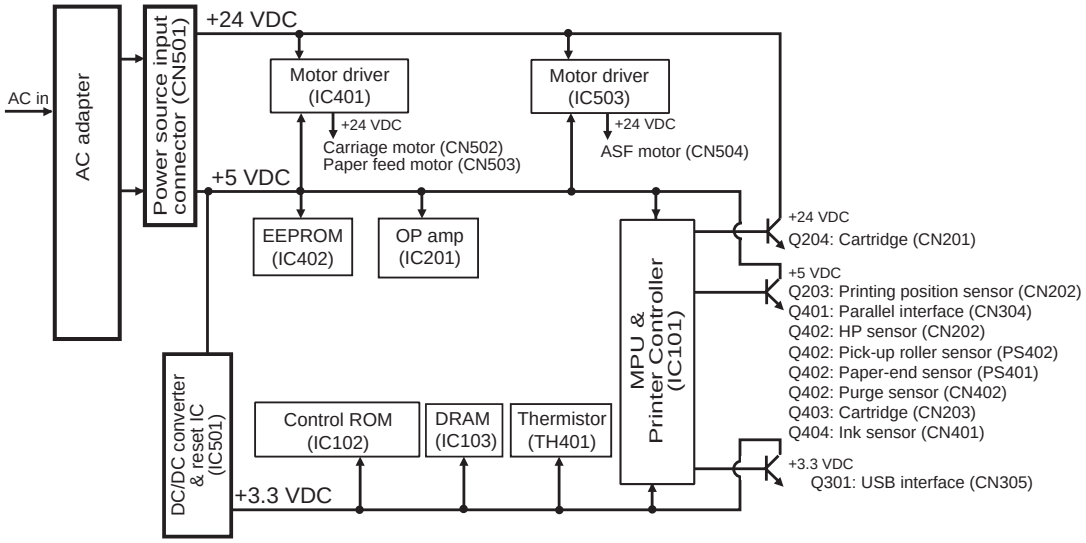

Figure 3-4 Power Source Line Block Diagram

2. CONNECTOR LOCATIONS AND PIN CONFIGURATIONS

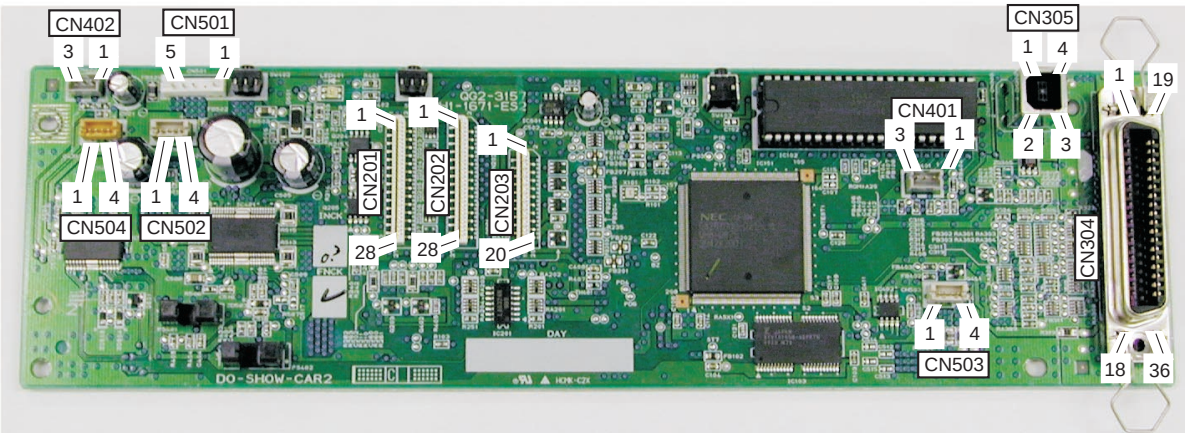

Figure 3-5 Control Board

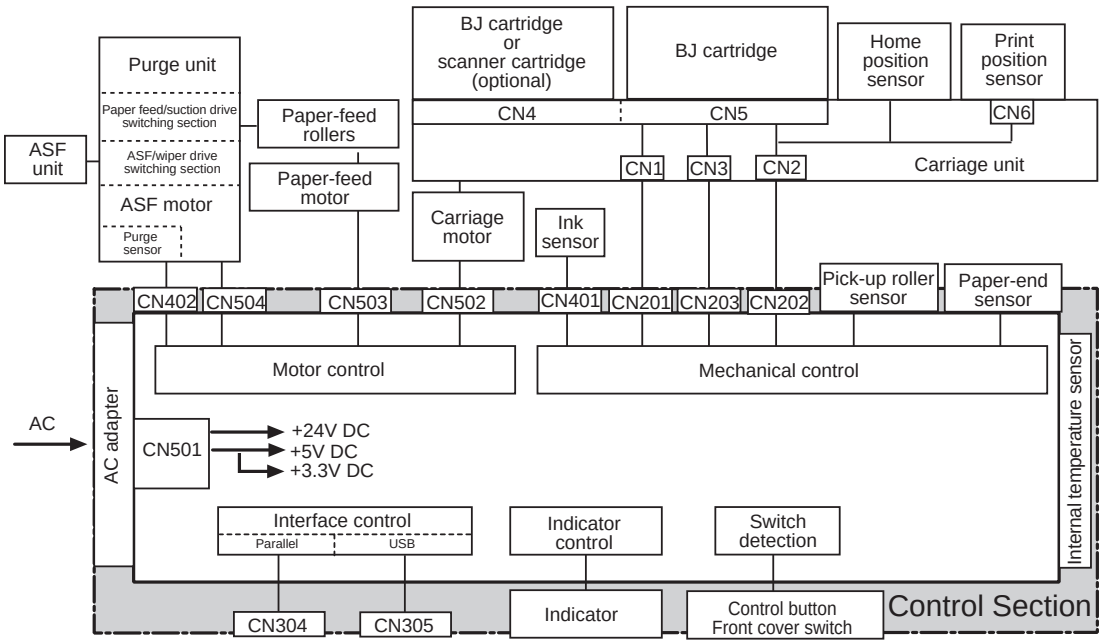

Figure 3-6 Printer Diagram

CN304 (Parallel Interface Connector)

Pin No.	Compatible Mode	Nibble Mode	ECP Mode
1	$\overline{\text{STROBE}}$	HostClk	HostClk
2	DATA1	Data1	Data1
3	DATA2	Data2	Data2
4	DATA3	Data3	Data3
5	DATA4	Data4	Data4
6	DATA5	Data5	Data5
7	DATA6	Data6	Data6
8	DATA7	Data7	Data7
9	DATA8	Data8	Data8
10	$\overline{\text{ACKNLG}}$	PrtClk	PeriphClk
11	BUSY	PrtBusy	PeriphAck
12	P.E.	AckDataReq	AckReverse
13	SELECT	Xflag	Xflag
14	$\overline{\text{AUTO FEED XT}}$	HostBusy	HostAck
15	N.C.	Undefined	Undefined
16	GND	Gnd	Gnd
17	GND	Gnd	Gnd
18	+5.0V	Vcc	Vcc
19	STROBE-RET (GND)	Signal Gnd	Signal Gnd
20	DATA1-RET (GND)	Signal Gnd	Signal Gnd
21	DATA2-RET (GND)	Signal Gnd	Signal Gnd
22	DATA3-RET (GND)	Signal Gnd	Signal Gnd
23	DATA4-RET (GND)	Signal Gnd	Signal Gnd
24	DATA5-RET (GND)	Signal Gnd	Signal Gnd
25	DATA6-RET (GND)	Signal Gnd	Signal Gnd
26	DATA7-RET (GND)	Signal Gnd	Signal Gnd
27	DATA8-RET (GND)	Signal Gnd	Signal Gnd
28	ACKNLG-RET (GND)	Signal Gnd	Signal Gnd
29	BUSY-RET (GND)	Signal Gnd	Signal Gnd
30	P.E.-RET (GND)	Signal Gnd	Signal Gnd
31	$\overline{\text{INIT}}$	INIT	ReverseReq
32	$\overline{\text{ERROR}}$	DataAvail	PeriphReq
33	GND	Undefined	Undefined
34	N.C	Undefined	Undefined
35	+5.0V	Undefined	Undefined
36	$\overline{\text{SELECT IN}}$	1284Active	1284Active

CN305 (USB Interface Connector)

Pin No.	Signal	IN/OUT	Function
1	PWR	IN	Cable power source
2	D-		Data
3	D+		Data
4	GND	...	Cable GND

CN401 (Ink Sensor Connector)

Pin No.	Signal	IN/OUT	Function
1	INK_PWM	OUT	Photo LED drive signal in the ink sensor
2	...	...	GND
3	INKS	IN	Voltage varying according to the reflected light amount

CN402 (Pump Sensor Connector)

Pin No.	Signal	IN/OUT	Function
1	VSEN	OUT	Photo LED drive signal in the ink sensor
2	...	...	GND
3	SNS_DO_RUCK	IN	Pump sensor sense signal High (sense)/Low

CN501 (DC Power Source Connector)

Pin No.	Signal	IN/OUT	Function
1	+24V	IN	+24VDC
2	HGND	...	GND
3	+5-GND	...	GND
4	+5V	IN	+5VDC

CN502 (Carriage Motor Connector)

Pin No.	Signal	IN/OUT	Function
1	$\overline{\text{CRA}}$	OUT	Carriage motor phase $\overline{\text{A}}$
2	$\overline{\text{CRB}}$	OUT	Carriage motor phase $\overline{\text{B}}$
3	CRA	OUT	Carriage motor phase A
4	CRB	OUT	Carriage motor phase B

CN503 (Paper-Feed Motor Connector)

Pin No.	Signal	IN/OUT	Function
1	LFA	OUT	Paper-feed motor phase A
2	LFB	OUT	Paper-feed motor phase B
3	$\overline{\text{LFA}}$	OUT	Paper-feed motor phase $\overline{\text{A}}$
4	$\overline{\text{LFB}}$	OUT	Paper-feed motor phase $\overline{\text{B}}$

CN504 (ASF Motor Connector)

Pin No.	Signal	IN/OUT	Function
1	ASFA	OUT	Purge (ASF) motor phase A
2	ASFB	OUT	Purge (ASF) motor phase B
3	$\overline{\text{ASFA}}$	OUT	Purge (ASF) motor phase $\overline{\text{A}}$
4	$\overline{\text{ASFB}}$	OUT	Purge (ASF) motor phase $\overline{\text{B}}$

CN201 (Carriage Ribbon Cable Connector) ↔ CN1: Carriage Board

Pin No.	Signal	IN/OUT	Function	CN2 Pin No.
1~10	HVH	OUT	Head driving voltage VH	19~28
11, 12, 13	SUBH0	OUT	Subheater's driving voltage (left side of carriage)	16, 17, 18
14, 15, 16	SUBH1	OUT	Subheater's driving voltage (right side of carriage)	13, 14, 15
17~26	HVH	OUT	Head driving voltage VH	3~12
27, 28	HVDD	OUT	Logic driving voltage in the head	1, 2

CN202 (Carriage Ribbon Cable Connector) ↔ CN2: Carriage Board

Pin No.	Signal	IN/OUT	Function	CN2 Pin No.
1	DIR	OUT	Serial data I/O direction control signal	28
2	HENB3	OUT	Front heater driving signal for nozzles 113-160 in the head	27
3	HENB2	OUT	Rear heater driving signal for nozzles 113-160 in the head	26
4	HENB1	OUT	Front heater driving signal for nozzles 1-112 in the head	25
5	HENB0	OUT	Rear heater driving signal for nozzles 1-112 in the head	24
6	BENB1*	OUT	Heater enable decoder's output signal-generation signal	23
7	BENB0*	OUT	Heater enable decoder's output signal-generation signal	22
8	EVEN	OUT	Heater selection signal for even-numbered nozzles in the head block	21
9	ODD	OUT	Heater selection signal for odd-numbered nozzles in the head block	20
10	HALT	OUT	Timing signal for latching serial data	19
11	HRSTX	OUT	Reset signal	18
12	...	...	GND	17
13	HSEL2B0	OUT	Front heater selection for the head block's lower nozzles (9-16, 25-32, ..., 153-160)	16
14	HSEL2A0	OUT	Rear heater selection for the head block's lower nozzles (9-16, 25-32, ..., 153-160)	15
15	HSEL1B0	OUT	Front heater selection for the head block's upper nozzles (1-8, 17-24, ..., 145-152)	14
16	HSEL1A0	OUT	Rear heater selection for the head block's upper nozzles (1-8, 17-24, ..., 145-152)	13
17	...	...	GND	12
18	HCLOCK0	IN/OUT	Clock signal for transferring the serial data	11
19	...	...	GND	10
20	HDATA0	IN/OUT	Serial data (left carriage) transferred according to the clock signal	9
21, 22	...	...	GND	7, 8
23	DIA0	IN	Head temperature sensor's (diode) anode in the head	6
24	DIK0	IN	Head temperature sensor's (diode) cathode	5
25	HPA	OUT	Home position sensor signal pull-up voltage	4
26	SNS_HP	IN	Home position sense signal	3
27	REGA	OUT	Drive voltage to the print position sensor's LED	2
28	REGC	IN	Voltage varying according to the reflected light amount	1

* Details on BENB0 and BENB1

BENB0	BENB1	Applicable Nozzles
Low	Low	1, 2, 9, 10,..., 153, 154 (1+8n, 2+8n : n=0~19)
High	Low	3, 4, 11, 12,..., 155, 156 (3+8n, 4+8n : n=0~19)
Low	High	5, 6, 13, 14,..., 157, 158 (5+8n, 6+8n : n=0~19)
High	High	7, 8, 15, 16,..., 159, 160 (7+8n, 8+8n : n=0~19)

CN203 (Carriage Ribbon Cable Connector) ↔ CN3: Carriage Board

Pin No.	Signal	IN/OUT	Function	CN3 Pin No.
1	HSEL2B1	OUT	Front heater selection for the head block's lower nozzles (9-16, 25-32, ..., 153-160)	20
2	HSEL2A1	OUT	Rear heater selection for the head block's lower nozzles (9-16, 25-32, ..., 153-160)	19
3	HSEL1B1	OUT	Front heater selection for the head block's upper nozzles (1-8, 17-24, ..., 145-152)	18
4	HSEL1A1	OUT	Rear heater selection for the head block's upper nozzles (1-8, 17-24, ..., 145-152)	17
5	...	...	GND	16
6	HCLOCK1	IN/OUT	Clock signal for transferring serial data	15
7	...	...	GND	14
8	HDATA1	IN/OUT	Serial data (right carriage) transferred according to the clock signal	13
9	...	...	GND	12
10	HENB5	OUT	Front heater driving signal for nozzles 1-160 in the head	11
11	HENB4	OUT	Rear heater driving signal for nozzles 1-160 in the head	10
12, 13, 14	...	...	GND	7, 8, 9
15	DIA1	IN	Head temperature sensor's (diode) anode	6
16	DIK1	IN	Head temperature sensor's (diode) cathode	5
17	...	...	GND	4
18, 19, 20	HVDD	IN	Logic drive voltage in the head	1, 2, 3

2.1 Carriage Board

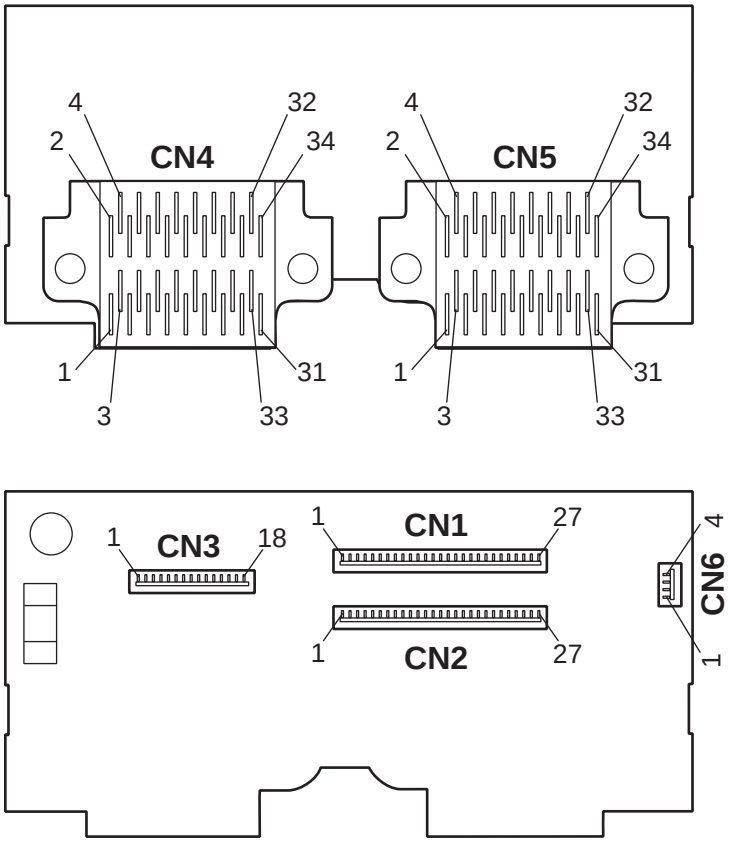

Figure 3-7 Carriage Board

CN1 (Carriage Ribbon Cable Connector)

See *page 3-8 (CN201 Carriage Ribbon Cable Connector).*

CN2 (Carriage Ribbon Cable Connector)

See *page 3-9 (CN202 Carriage Ribbon Cable Connector).*

CN3 (Carriage Ribbon Cable Connector)

See *page 3-9 (CN203 Carriage Ribbon Cable Connector).*

CN4/CN5 (Left/Right Cartridge)

Pin No.	Signal	IN/OUT	Function
1~32			See *page 3-11 (BJ Cartridge).*
33, 34	...	...	N.C.

CN6 (Print Position Sensor Connector)

Pin No.	Signal	IN/OUT	Function
1	REGA	OUT	Drive voltage to the print position sensor's LED
2	SNSG	...	GND
3	REGC	OUT	Voltage varying according to the reflected light amount
4	LGND	...	GND

2.2 BJ Cartridge

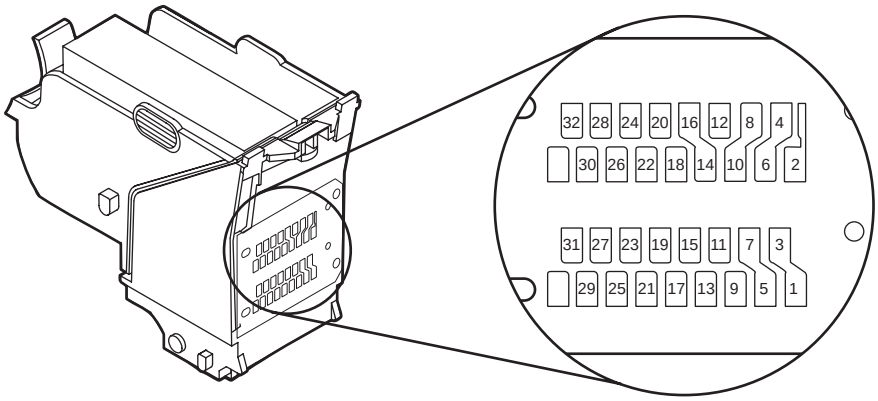

Figure 3-8 BJ Cartridge

Pin No.	Signal	IN/OUT	Function
1, 2, 3	HVH	OUT	Head heater driving voltage VH +24 V
4, 6	SUBH0/1	OUT	Subheater's driving voltage
5, 7, 8, 10	VHG	...	Head driving voltage VHGND
9	HDATA0/1	OUT	Serial data transferred according to the clock signal (H_CLK) Includes head identification information and rank resistance
11	HSEL1B0/1	OUT	Rear heater selection signal for the head block's upper nozzles (1-8, 17-24, ..., 145-152)
12	HVDD	OUT	Head's logic driving voltage +5 V
13	HCLK0/1		Clock signal for transferring the serial data
14, 16	GND	OUT	Head's logic driving voltage HVDD's GND
15	HSEL1A0/1	OUT	Front heater selection signal for the head block's upper nozzles (1-8, 17-24, ..., 145-152)
17	HSEL2A0/1	OUT	Front heater selection signal for the head block's lower nozzles (9-16, 25-32, ..., 153-160)
18	HSEL2B0/1	OUT	Rear heater selection signal for the head block's lower nozzles (9-16, 25-32, ..., 153-160)
19	HLAT	OUT	Timing signal for latching serial data
20	ODD	OUT	Heater selection signal for odd-numbered nozzles in the head block
21	EVEN	OUT	Heater selection signal for even-numbered nozzles in the head block
22	BENB0*	OUT	Heater enable decoder's output signal-generation signal
23	BENB1*	OUT	Heater enable decoder's output signal-generation signal
24	HENB0/4	OUT	Rear heater drive signal for nozzles 1-112 in the head
25	HENB1/5	OUT	Front heater drive signal for nozzles 1-112 in the head
26	HENB2/4	OUT	Rear heater drive signal for nozzles 113-160 in the head
27	HENB3/5	OUT	Front heater drive signal for nozzles 113-160 in the head
28	DIR	OUT	Serial data I/O direction control signal
29	HRSTX	OUT	Reset signal
30	DIA0(DIA1)	OUT	Head temperature sensor's (diode) anode
31	DIK0(DIK1)	OUT	Head temperature sensor's (diode) cathode
32	...	...	Unused

* Details on BENB0 and BENB1

BENB0	BENB1	Applicable Nozzles
Low	Low	1, 2, 9, 10, ..., 153, 154 (1+8n, 2+8n : n=0~19)
High	Low	3, 4, 11, 12, ..., 155, 156 (3+8n, 4+8n : n=0~19)
Low	High	5, 6, 13, 14, ..., 157, 158 (5+8n, 6+8n : n=0~19)
High	High	7, 8, 15, 16, ..., 159, 160 (7+8n, 8+8n : n=0~19)

2.3 Scanner Cartridge (Optional)

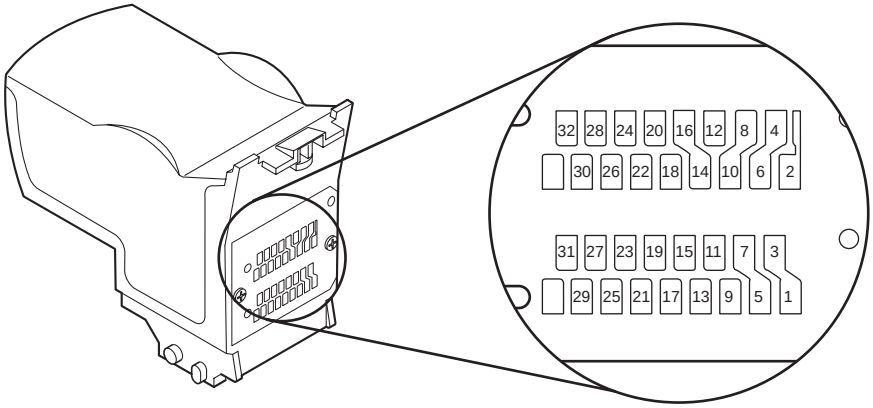

Figure 3-9 Scanner Cartridge

Pin No.	Signal	IN/OUT	Function
1, 2, 3	VHLED	IN	+24 V for LED
4	N.C.	...	Unused
5	GNDLED	...	GND
6	N.C.	...	Unused
7, 8	GNDLED	...	GND
9	DT0	IN/OUT	Scanned image's serial data
10	GNDLED	...	GND
11	RWR	IN	Write clock for setting the internal resistor
12	VDD	IN	+5 V
13	DTCK	IN/OUT	Scanned image's serial data clock
14	VSS	...	GND
15	REN	IN	Enable signal for setting the internal resistor
16	VSS	...	GND
17	RDT	IN	Internal resistor setting data
18	SCHKR	IN	Scanner cartridge detection and recognition
19	LNST	IN	Scan start signal (1-line scanning)
20, 21, 22	N.C.	IN	Unused
23	DT1	IN	For factory use
24	DT2	IN	For factory use
25	DT3	IN	For factory use
26, 27, 28	N.C.	IN	Unused
29	RST	IN	Reset
30	DIA	OUT	Scanner cartridge detection and recognition
31	DIK	OUT	Scanner cartridge detection and recognition
32	...	...	Unused

2.4 AC Adapter

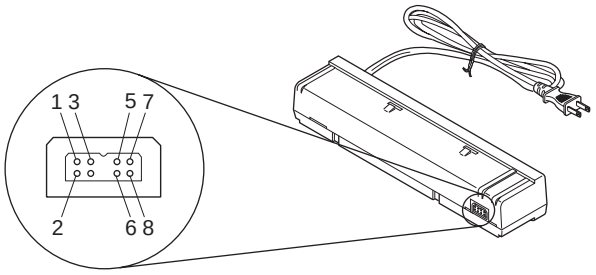

Figure 3-10 AC Adapter

Pin No.	Signal	IN/OUT	Function
1	...	...	N.C.
2	...	...	N.C.
3	+24V	...	+24V DC
4	...	...	N.C.
5	+5V	OUT	+5V DC
6	+5-GND	...	GND
7	...	...	N.C.
8	HGND	...	GND

2.5 DC Power

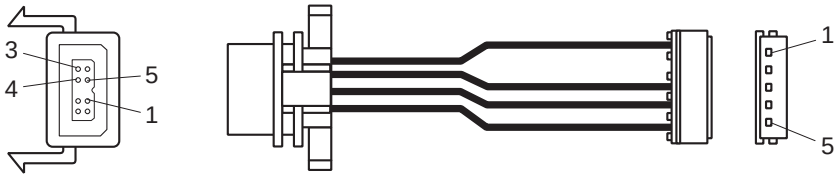

Figure 3-11 DC Power Cable

Pin No.	Signal	IN/OUT	Function
1	+24V	OUT	+24V DC
2	...	...	
3	HGND	...	GND
4	+5V-GND	...	GND
5	+5V	OUT	+5V DC

2.6 DC Carriage Motor

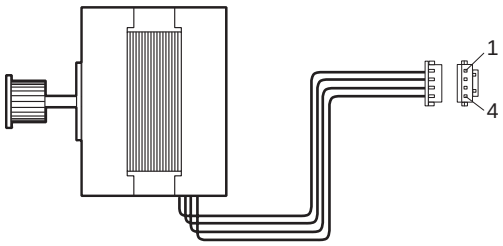

Figure 3-12 Carriage Motor

Pin No.	Signal	IN/OUT	Function
1	$\overline{\text{CRA}}$	IN	Carriage motor phase $\overline{\text{A}}$
2	$\overline{\text{CRB}}$	IN	Carriage motor phase $\overline{\text{B}}$
3	CRA	IN	Carriage motor phase A
4	CRB	IN	Carriage motor phase B

2.7 Paper Feed Motor

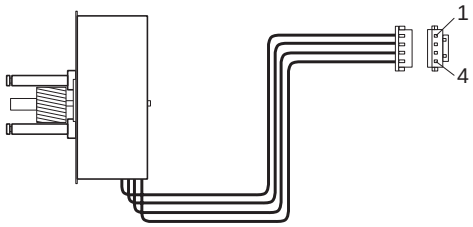

Figure 3-13 Paper Feed Motor

Pin No.	Signal	IN/OUT	Function
1	LFA	IN	Paper-feed motor phase A
2	LFB	IN	Paper-feed motor phase B
3	$\overline{\text{LFA}}$	IN	Paper-feed motor phase $\overline{\text{A}}$
4	$\overline{\text{LFB}}$	IN	Paper-feed motor phase $\overline{\text{B}}$

2.8 ASF Motor

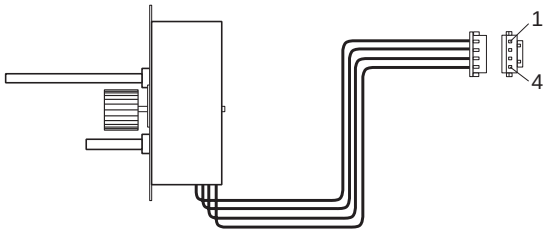

Figure 3-14 ASF Motor

Pin No.	Signal	IN/OUT	Function
1	ASFA	IN	ASF motor phase A
2	ASFB	IN	ASF motor phase B
3	$\overline{\text{ASFA}}$	IN	ASF motor phase $\overline{\text{A}}$
4	$\overline{\text{ASFB}}$	IN	ASF motor phase $\overline{\text{B}}$

2.9 Ink Sensor

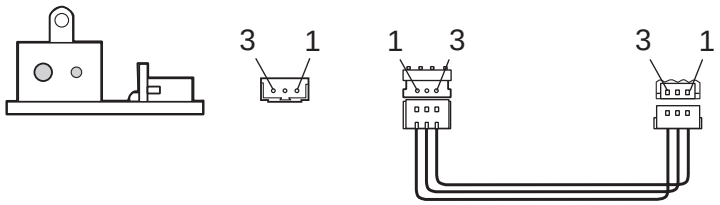

Figure 3-15 Ink Sensor

Pin No.	Signal	IN/OUT	Function
1	INK/PWM	IN	Photo LED drive voltage in the ink sensor
2	...	...	GND
3	INKS	OUT	Voltage varying according to the reflected light amount

2.10 Printing Position Sensor

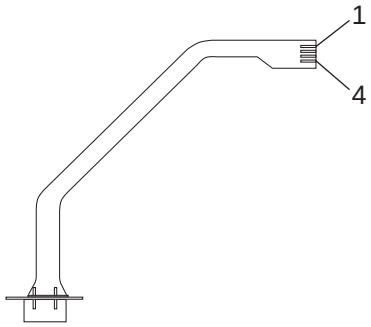

Figure 3-16 Print Position Sensor

Pin No.	Signal	IN/OUT	Function
1	REGA	OUT	Drive voltage to the print position sensor's LED
2	SNSG	...	GND
3	REGC	OUT	Voltage varying according to the reflected light amount
4	LGND	...	GND

2.11 Purge Sensor Connector

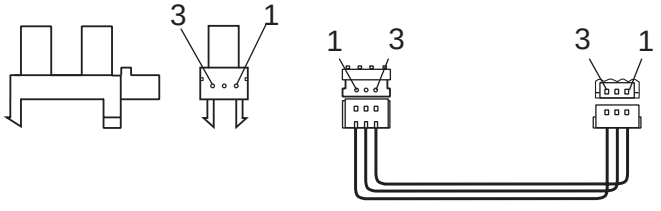

Figure 3-17 Purge Sensor

Pin No.	Signal	IN/OUT	Function
1	VSEN	IN	Photo LED drive voltage in the ink sensor
2	...	...	GND
3	SNS_DO_RUCK	OUT	Pump sensor sense signal High (sense)/Low

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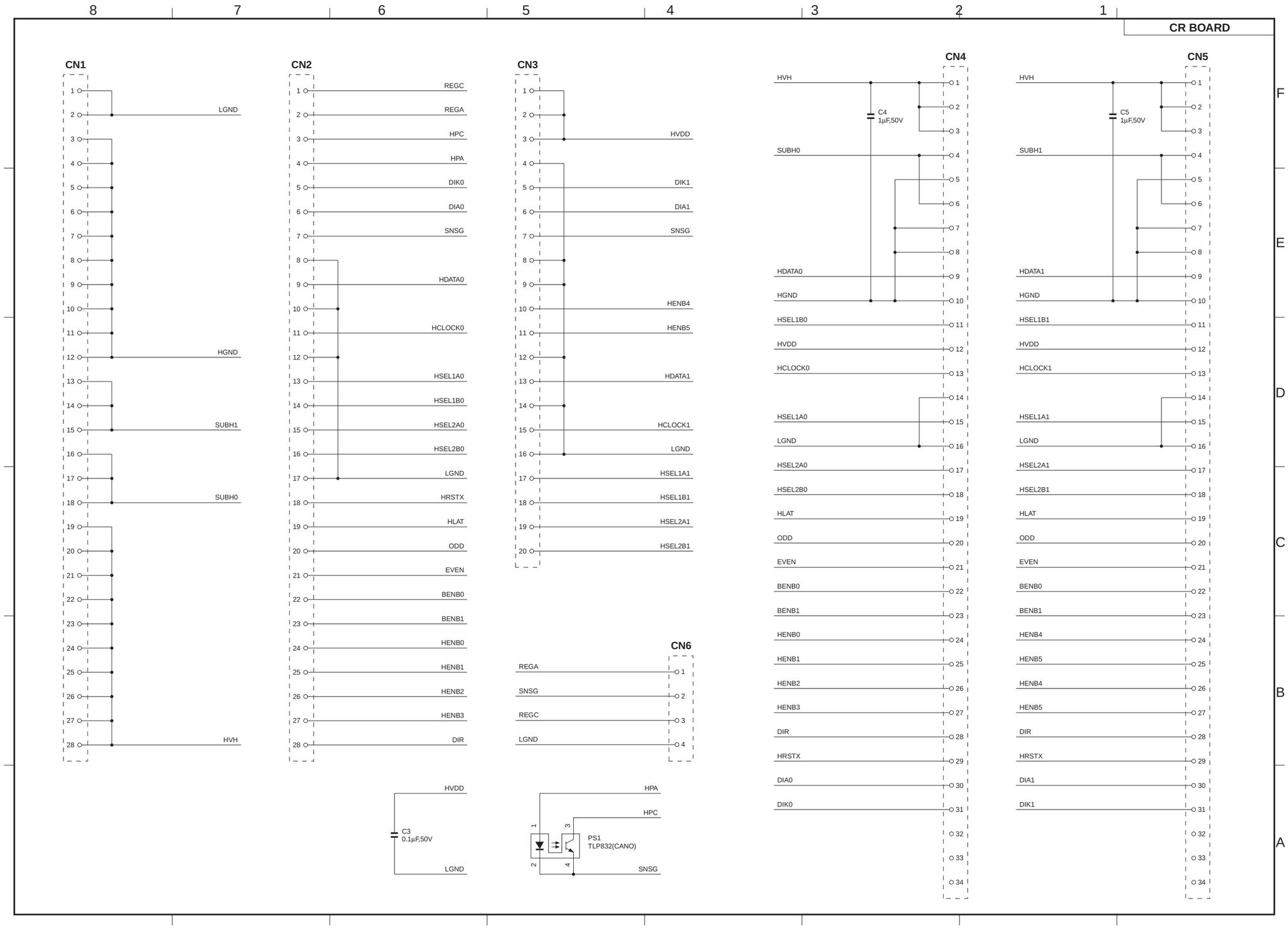
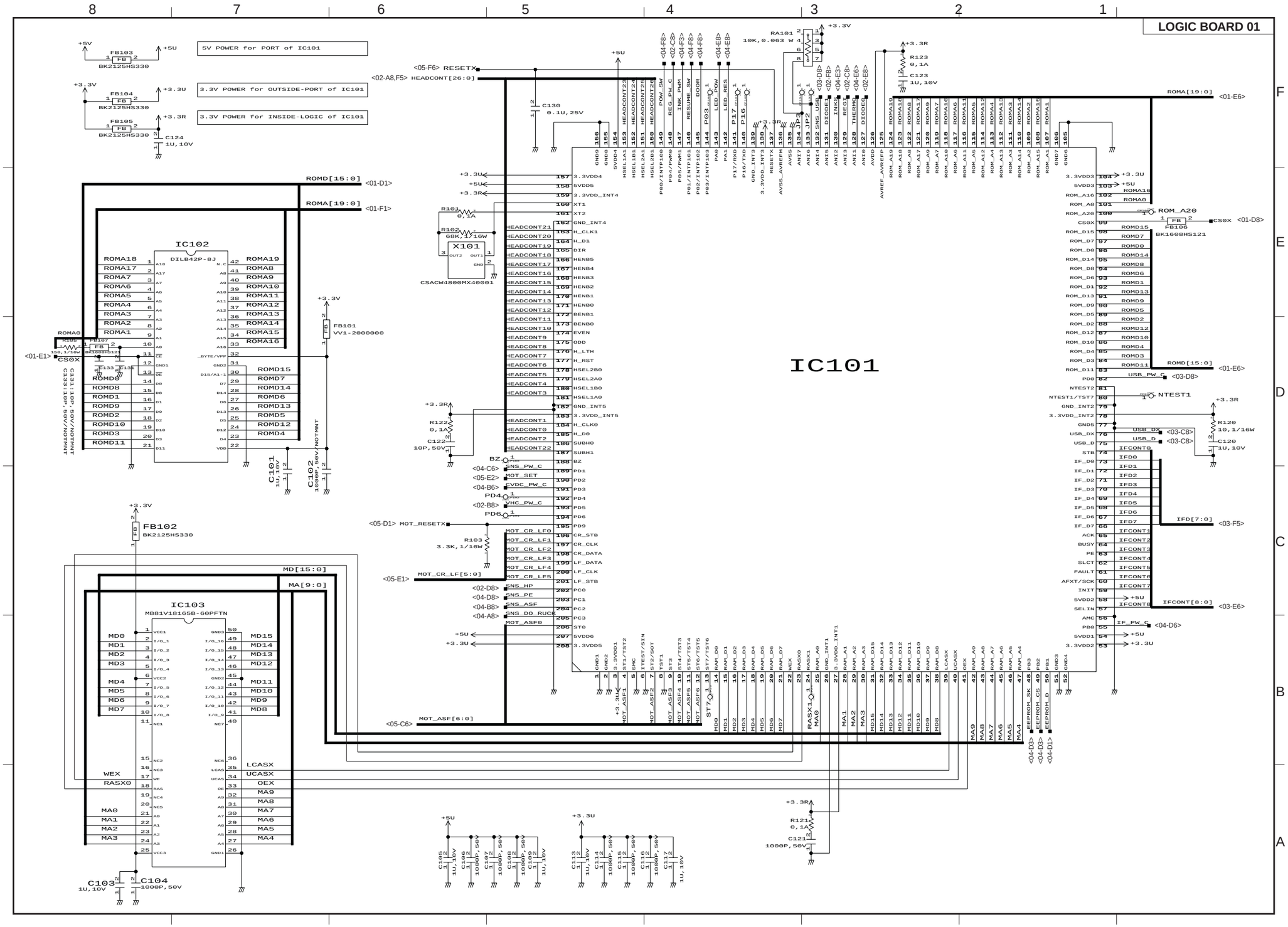
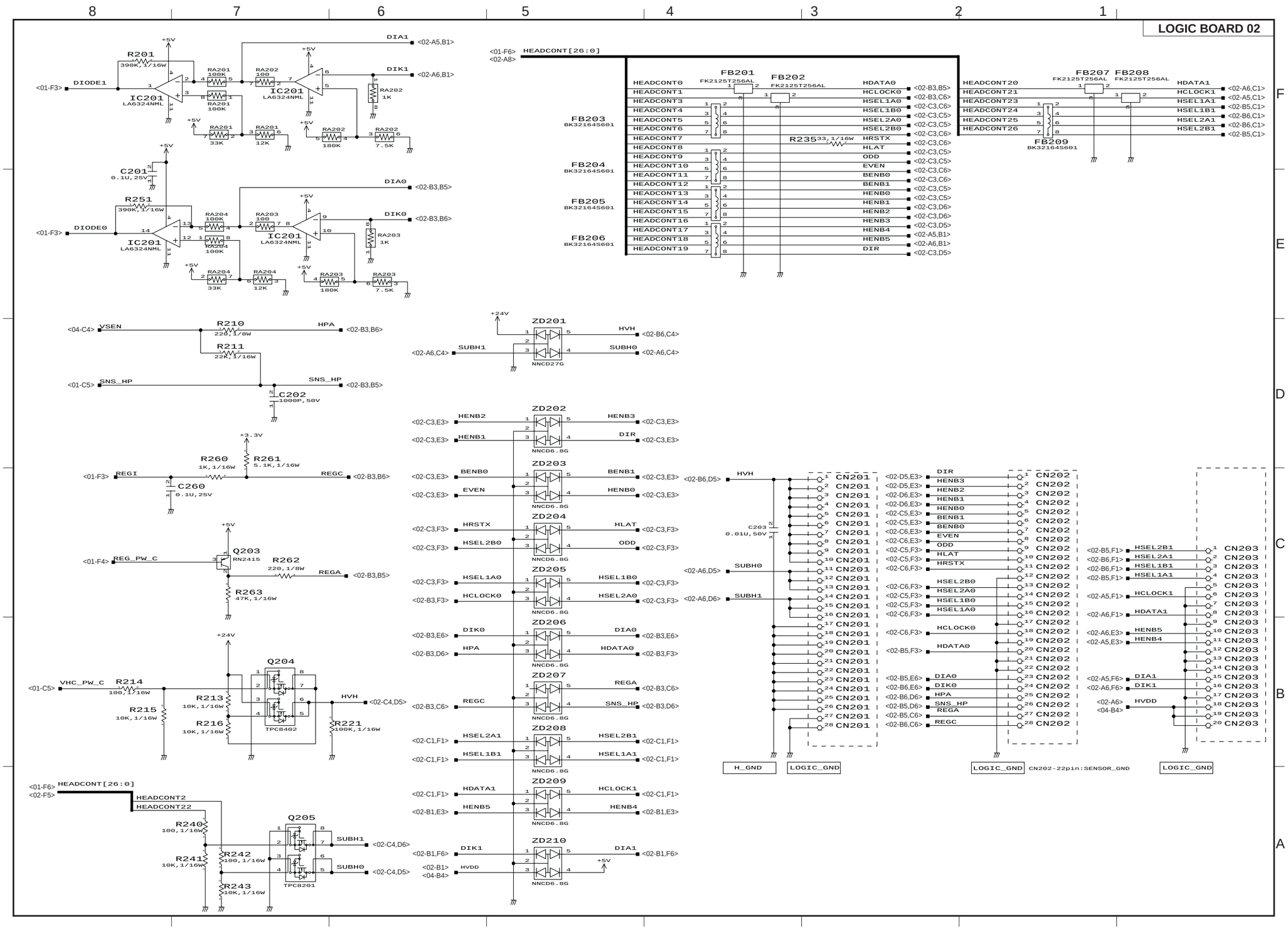
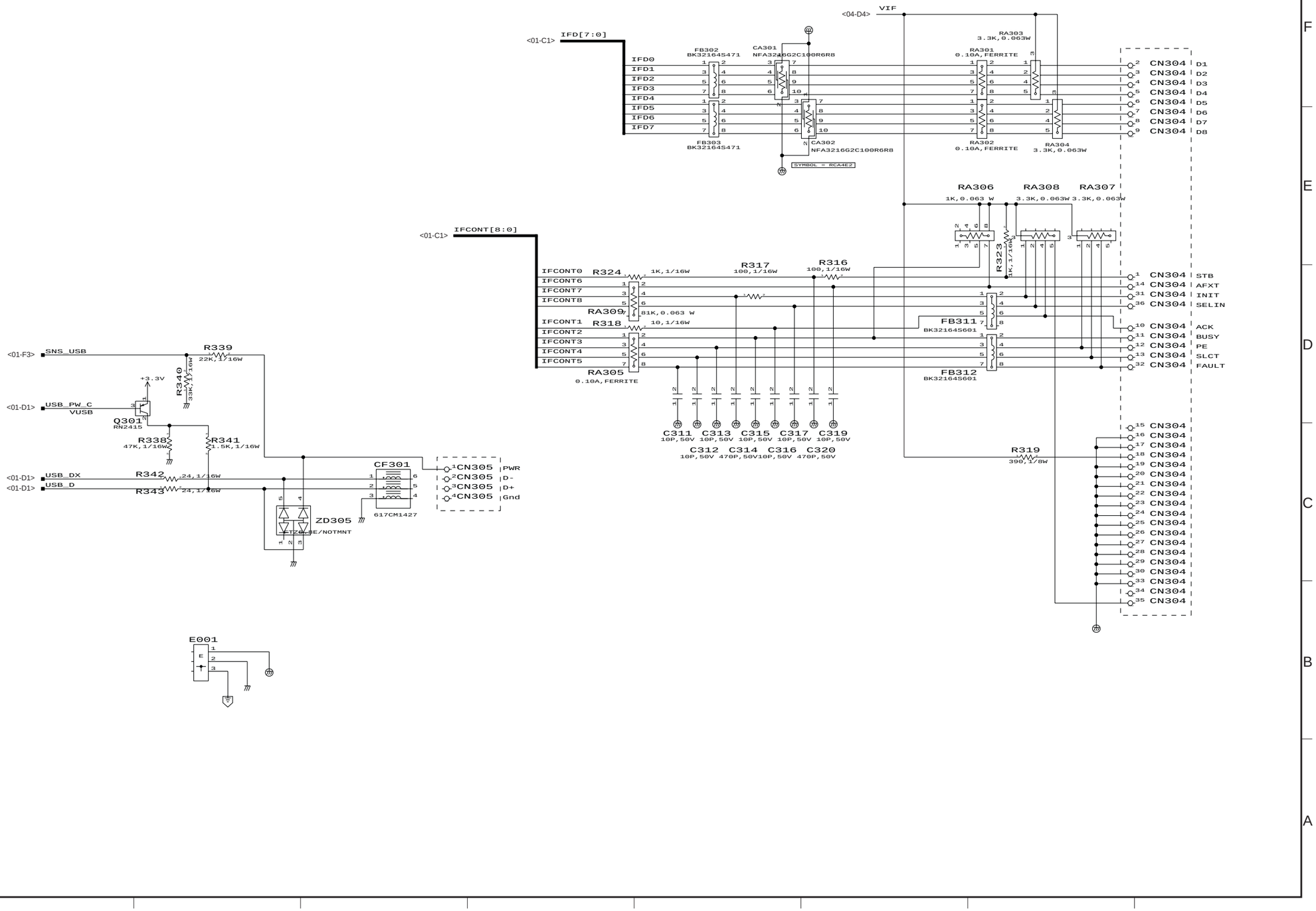
2.12 Circuit Diagrams



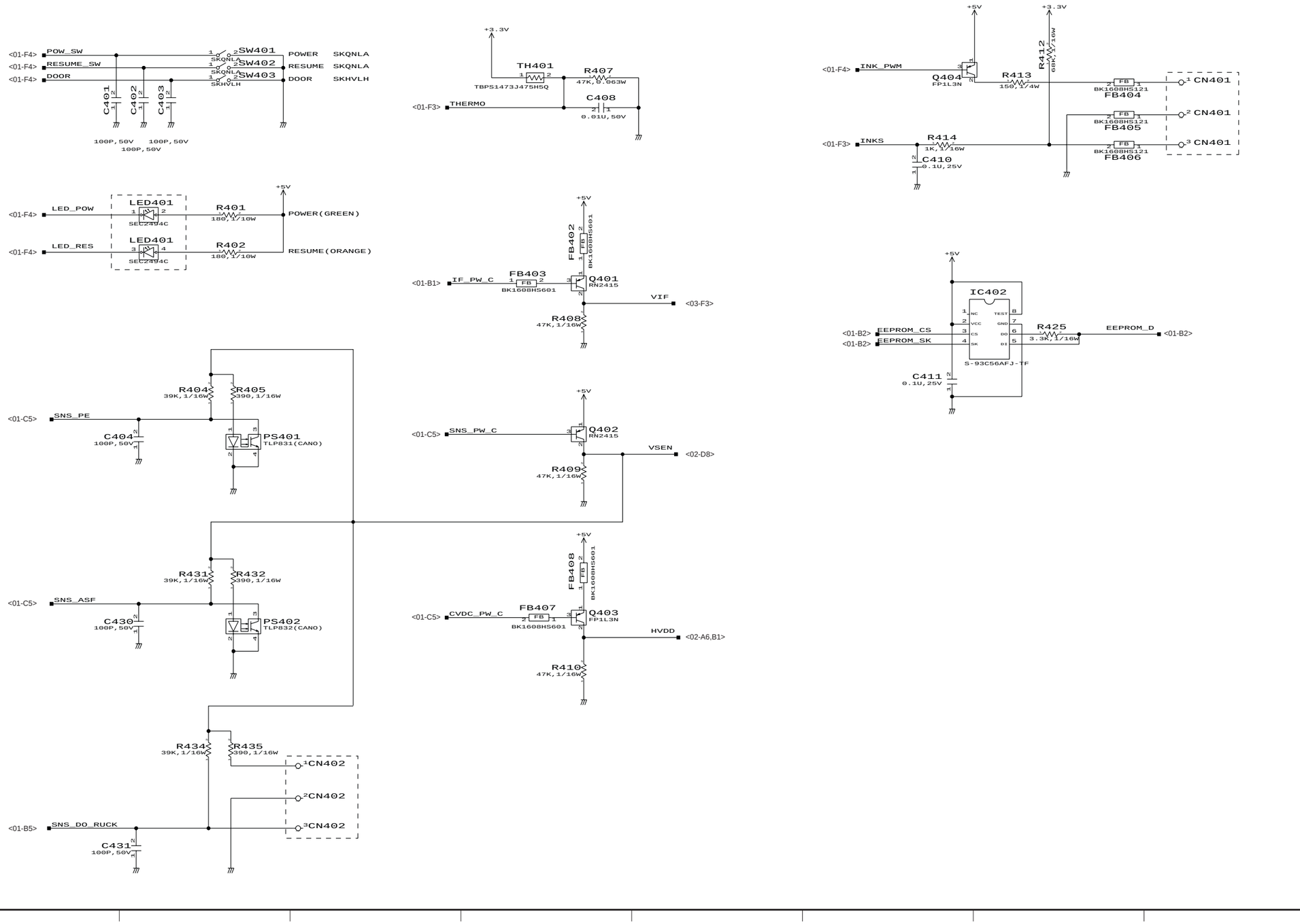

LOGIC BOARD 01
IC101
5V POWER for PORT of IC101
3.3V POWER for OUTSIDE-PORT of IC101
3.3V POWER for INSIDE-LOGIC of IC101
IC102
IC103
X101
CSACW4800MX40001
ROMD[15:0]
ROMA[19:0]
MD[15:0]
MA[9:0]
<05-F6> RESETX
<02-A8,F5> HEADCONT[26:0]
<05-D1> MOT_RESETX
<05-E1> MOT_CR_LF[5:0]
<05-C6> MOT_ASF[6:0]
<01-E6>
<01-D8>
<03-D8>
<03-C8>
<03-F5>
<04-D6>
<03-E6>
<01-E1>
<01-F1>
<01-D1>
IFD[7:0]
IFCONT[8:0]
CS0X
NTEST1
USB_PW_C
IF_PW_C
FB101
FB102
FB103
FB104
FB105
FB106
FB107
BK2125HS330
BK1608HS121
R101
R102
R103
R120
R121
R122
R123
C101
C102
C103
C104
C105
C106
C107
C108
C109
C110
C111
C112
C113
C114
C115
C116
C117
C118
C120
C121
C122
C123
C130
C131
C133
C138


LOGIC BOARD 02
8
7
6
5
4
3
2
1
F
E
D
C
B
A
R201 390K,1/16W
IC201 LA6324NML
RA201 100K
RA202 100
RA202 1K
RA201 33K
RA201 12K
RA202 180K
RA202 7.5K
DIA1
DIK1
DIODE1
C201 0.1U,25V
R251 390K,1/16W
RA204 100K
RA203 100
RA203 1K
RA204 33K
RA204 12K
RA203 180K
RA203 7.5K
DIA0
DIK0
DIODE0
R210 220,1/8W
R211 22K,1/16W
C202 1000P,50V
R260 1K,1/16W
R261 5.1K,1/16W
C260 0.1U,25V
Q203 RN2415
R262 220,1/8W
R263 47K,1/16W
Q204 TPC8402
R214 100,1/16W
R213 10K,1/16W
R215 10K,1/16W
R216 10K,1/16W
R221 100K,1/16W
Q205 TPC8201
R240 100,1/16W
R242 100,1/16W
R241 10K,1/16W
R243 10K,1/16W
HEADCONT[26:0]
FB201 FK2125T256AL
FB202 FK2125T256AL
FB203 BK321645601
FB204 BK321645601
FB205 BK321645601
FB206 BK321645601
FB207 FK2125T256AL
FB208 FK2125T256AL
FB209 BK321645601
R235 33,1/16W
ZD201 NNCD27G
ZD202 NNCD6.8G
ZD203 NNCD6.8G
ZD204 NNCD6.8G
ZD205 NNCD6.8G
ZD206 NNCD6.8G
ZD207 NNCD6.8G
ZD208 NNCD6.8G
ZD209 NNCD6.8G
ZD210 NNCD6.8G
C203 0.01U,50V
CN201
CN202
CN203
H_GND
LOGIC_GND
CN202-22pin:SENSOR_GND

LOGIC BOARD 03



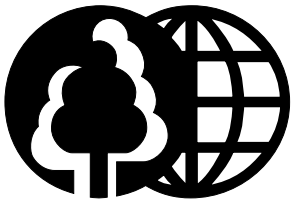
LOGIC BOARD 04



LOGIC BOARD 05

FB501 FBMH3216HM501NT
CN501 +5V
CN501 +5V-GND
CN501 HGND
CN501 +24V
FB502 FBMH3216HM501NT
FB503 FBMH3216HM501NT
C501 100U,35V
IC501 MM1478FFBE
C502 1U,10V
R502 1K,1/16W
C503 47U,35V
R530 0,1A
C530 1000P,50V
R531 0,1A
C531 1000P,50V
+3.3V
by IC501
by FB102(IC103)
RESETX <01-F6>
24V for BJ-HEAD
R503 12K,1/10W
FU501 FCC3220202
D501 D1FS4A
24V for TB62201F
C505 220U,35V
R504 100K,1/16W
C504 1000U,35V
C507 1000P,50V
FU502 FCC3220202
24V for MTD2002G
C506 220U,35V
R505 100K,1/16W
C519 0.01U,50V
C520 0.01U,50V
IC503 MTD2002G
MOT_ASF[6:0] <01-B6>
MOT_ASF6
MOT_ASF1
MOT_ASF4
MOT_ASF5
MOT_ASF2
MOT_ASF3
R517 0.51,1/4W
R519 0.51,1/4W
R521 22K,1/16W
C521 3300P,50V
ZD505 RD3.3SB2
R522 390,1/16W
ZD504 RD2.7SB1
Q501 FA1L4M
MOT_ASF6
CN504 ASFA
CN504 ASFB
CN504 ASFA*
CN504 ASFB*
R506 2K,1/16W
R507 22K,1/16W/NOTMNT
R508 390,1/16W
C516 1000P,50V
C517 680P,50V/NOTMNT
ZD503 RD2.7SB1
C518 0.1U,25V
IC401 TB62201AF
R509 0.75,1/4W
C508 0.22U,50V
C509 0.015U,50V
R513 0.75,1/4W
R511 0.75,1/4W
R515 0.75,1/4W
C510 0.01U,50V
C511 0.01U,50V
ZD501 NNCD27G/NOTMNT
CN502 CRA*
CN502 CRB*
CN502 CRA
CN502 CRB
MOT_SET <01-C5>
MOT_CR_LF[5:0] <01-C6>
MOT_CR_LF6
MOT_CR_LF1
MOT_CR_LF2
MOT_RESETX <01-C6>
MOT_CR_LF3
MOT_CR_LF4
MOT_CR_LF5
FB520 FB521 FB522 FB523
CN503 LFA
CN503 LFB
CN503 LFA*
CN503 LFB*
FBMH2016HM251N*4
C512 100P,50V
C513 100P,50V
C514 100P,50V
C515 100P,50V

Appendix



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CANON INC.

BJC-6200

PARTS CATALOG

REVISION 0

Q30-3310-220,720	120V(CCSI)
Q30-3310-221,721	120V(CAN)
Q30-3310-222,722	120V(LATIN LV)
Q30-3310-223,723	220V-240V(LATIN HV)
Q30-3310-230,630,730	220V-240V(EUR)
Q30-3310-231,631,731	220V-240V(GER)
Q30-3310-232,632,732	220V-240V(FRN)
Q30-3310-233,733	220V-240V(ASIA HV)
Q30-3310-234	220V-240V(EUR BULK)
Q30-3310-240,740	220V-240V(AUST)
Q30-3310-260,760	220V-240V(KRN)
Q30-3310-280,680,780	220V-240V(UK)
Q30-3312-223,723	120V(TWN)
Q30-3312-250,750	220V-240V(HK)

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APR. 2000 **QY8-31AP-000**

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0400 GR 0.23-0

BJC-6200

PARTS CATALOG

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Application

This manual has been issued by Canon Inc. for qualified person to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

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Kanagawa 213-8512, Japan

DTP System

This manual was produced on an Apple® Power Macintosh® G3 personal computer and Canon LBP-2030PS laser beam printer, final pages were printed on Valityper® 4300J.
A Canon mo-5001S™ Magneto-optical Storage Subsystem with mo-502M™ Magneto-Optical Storage Disk Cartridge and mo-IF2™ Machitosh® interface kit were used for storing large volumes of page layout, graphic and parts list data for this manual.
Parts layout illustrations and Logotypes were created using MACROMEDIA® FreeHand® 7J.
Pattern drawing were scanned by CanoScan 600 scanner with Adobe® photoshop®.
Documents and page layouts were created using QuarkXpress® 3.3J.
Parts lists were created using Helix Tecnologies® Herix Xpress® and converted to EPS files.

I. CONTENTS

A. PARTS LAYOUT & PARTS LIST
B. SCREWS & WASHERS LIST
C. NUMERICAL INDEX

II. ABOUT THIS MANUAL

A PARTS LAYOUT & PARTS LIST

Parts layout illustration

a) Parts search

Find a part from the parts layout illustration and find its key number from the parts list to identify the part number and name. For screws, nuts, washers, lock washers, pins, spacers, see SCREWS &WASHERS LIST.

Note: If parts have the same or similar shape but different specifications, their key number is assigned to several part numbers and names in the parts list.

b) Parts replacement procedure

To replace parts, the parts layout illustrations have figure numbers according to the disassembly procedure of the product. The parts that require careful work are shown the illustration.

Parts list

a) FIGURE & KEY No.

The FIGURE & KEY No. column corresponds to the key numbers assigned to the parts in the parts layout illustration.
It also corresponds to the part locations printed on the PC board.

b) PART NUMBER

The PART NUMBER column gives the part numbers corresponding to the key numbers. To order a part, indicate the part number clearly.
Note: Parts marked NPN are not service parts.

c) RANK

The service parts with N in the RANK column are order parts.

d) QTY

The QTY column gives the number of parts in the corresponding components layout illustration.

e) DESCRIPTION

The DESCRIPTION column gives the part names in English.
To order a part, indicate the part name, too.

OPTIONS & CONSUMABLES

These are illustrations and a list of units that can be used as optional consumable equipments.

TOOL LIST

This is a list of tools used for servicing products.

B. SCREWS & WASHERS LIST

This is a list of screws, nuts, washers, lock washers, pins, and spacers.
The QTY column does not give the number of parts used.

C. NUMERICAL INDEX

All the parts listed in this parts catalog are arranged in order of part number. You can identify part locations and names from the NUMERICAL INDEX.

A. PARTS LAYOUT & PARTS LIST

FIGURE 1 PRINTER & ACCESSORIES

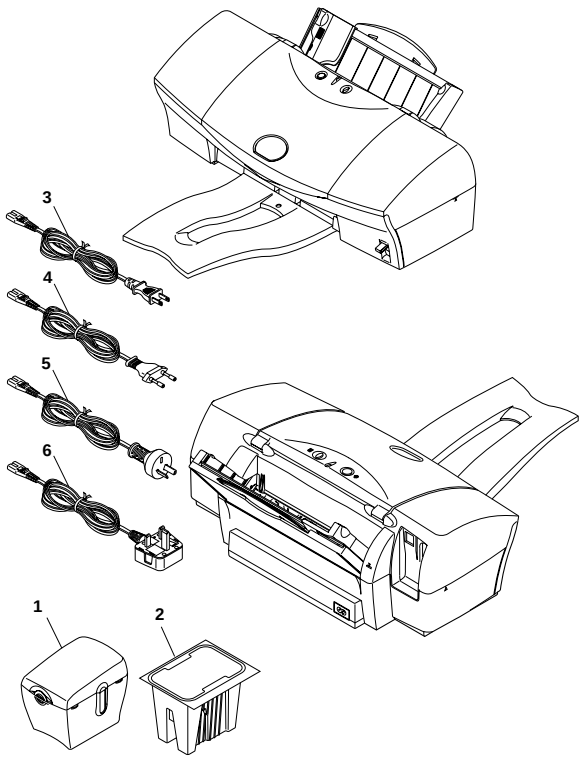

FIGURE 2 FRONT COVER

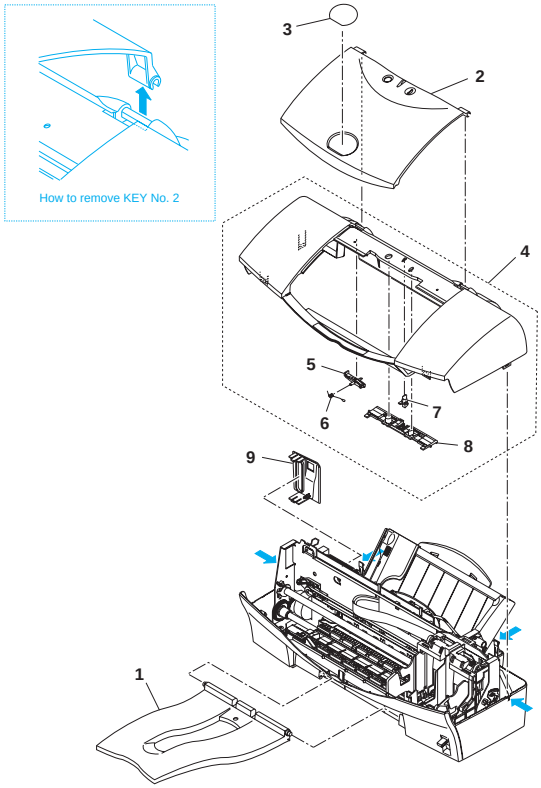

FIGURE 3 ASF UNIT & LOGIC BOARD

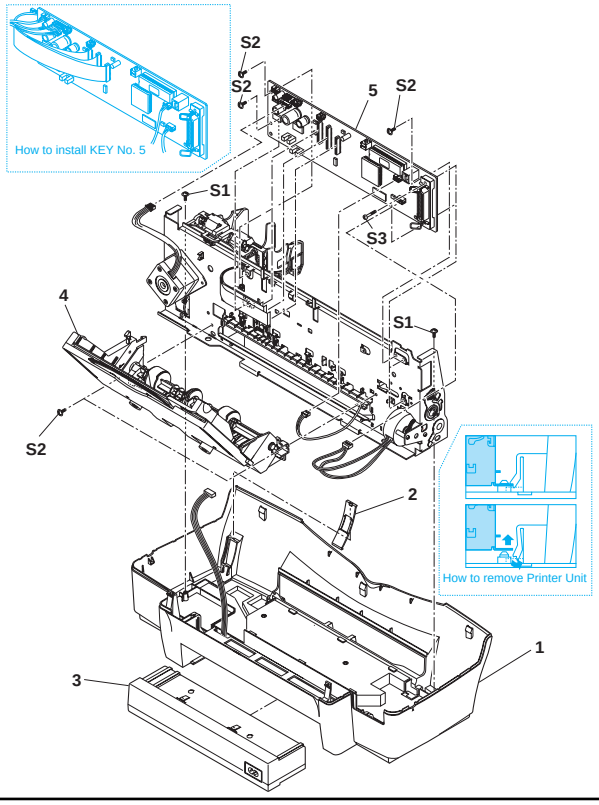

FIGURE 4 WASTE INK ABSORBER

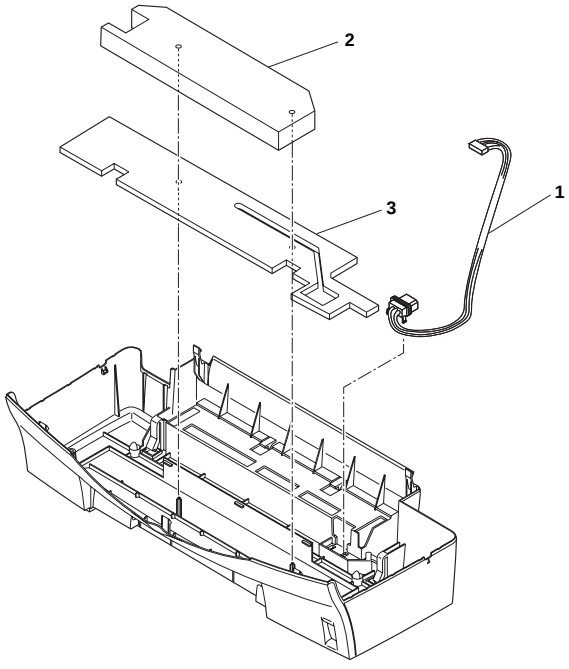

FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	REMARKS
1- 1	QG5-1290-000	N	1	BJ CARTRIDGE CONTAINER	
2	NPN		1	COLOR BJ CARTRIDGE PACK	CONSUMABLES
3	WT3-5095-000		1	CORD, POWER	120V
4	WT3-5069-000		1	CORD, POWER	220V-240V
5	WT3-5060-000		1	CORD, POWER	220V-240V (AUS)
6	WT3-5090-000		1	CORD, POWER	220V-240V (UK)
2- 1	QB1-4578-000		1	OUTPUT TRAY	
2	QB1-4581-000		1	COVER, FRONT	
3	QB1-4582-000		1	PLATE, MODEL NAME	
4	QG5-1504-000		1	UPPER COVER UNIT	
5	QB1-4642-000		1	BUTTON, PUSH	
6	QB1-4664-000		1	SPRING, BUTTON	
7	QB1-4585-000		1	GUIDE, INDICATOR	
8	QB1-4584-000		1	BUTTON, PUSH	
9	QB1-4579-000		1	COVER, I/F	
3- 1	QG5-1505-000		1	BOTTOM CASE UNIT	(WITH FOOT)
2	QB1-4580-000		1	COVER, LEVER	
3	QH3-3383-000		1	AC ADAPTER: 100V-120V 50/60HZ	TWN
	QH3-3386-000		1	AC ADAPTER: 100V-120V 50/60HZ	
	QH3-3388-000		1	AC ADAPTER: 220V-240V 50/60HZ	
	QH3-3389-000		1	AC ADAPTER: 220V-240V 50/60HZ	AUST,ASIA HV,HK
4	QG5-1506-000		1	SHEET FEEDER UNIT	
5	QG2-3157-000		1	LOGIC BOARD ASS'Y	
4- 1	QG2-3216-000		1	DC CONNECTOR ASS'Y	(WITH CABLE)
2	QB1-4590-000		1	ABSORBER, INK	
3	QB1-4589-000		1	ABSORBER, INK	

FIGURE 5 PURGE UNIT

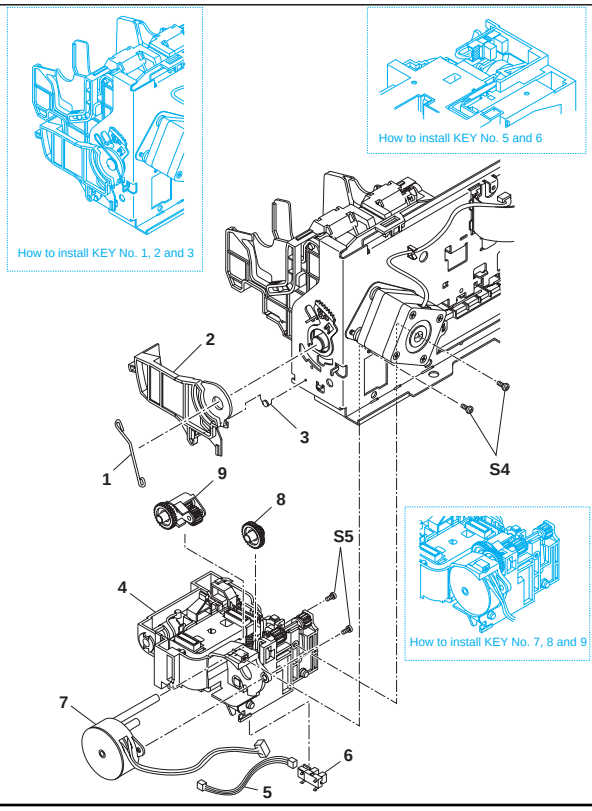

FIGURE 6 CARRIAGE UNIT

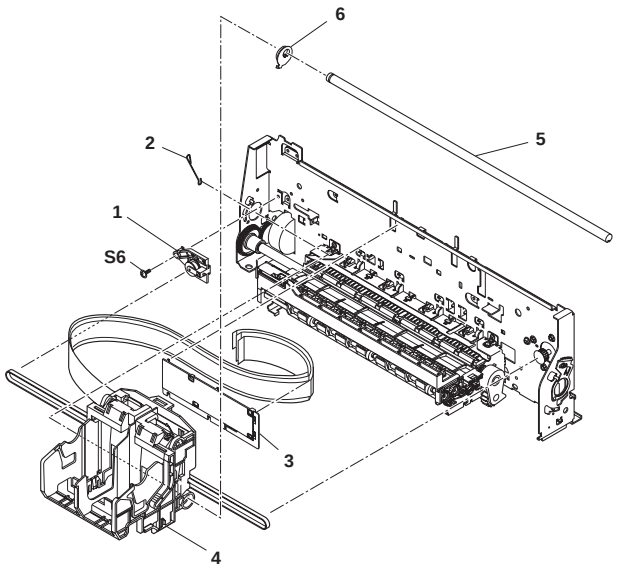

FIGURE 7 CARRIAGE PART

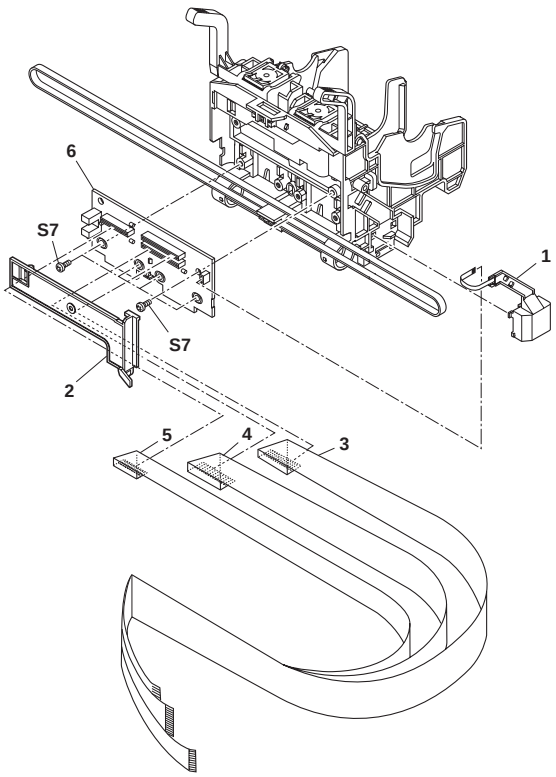

FIGURE 8 MOTOR

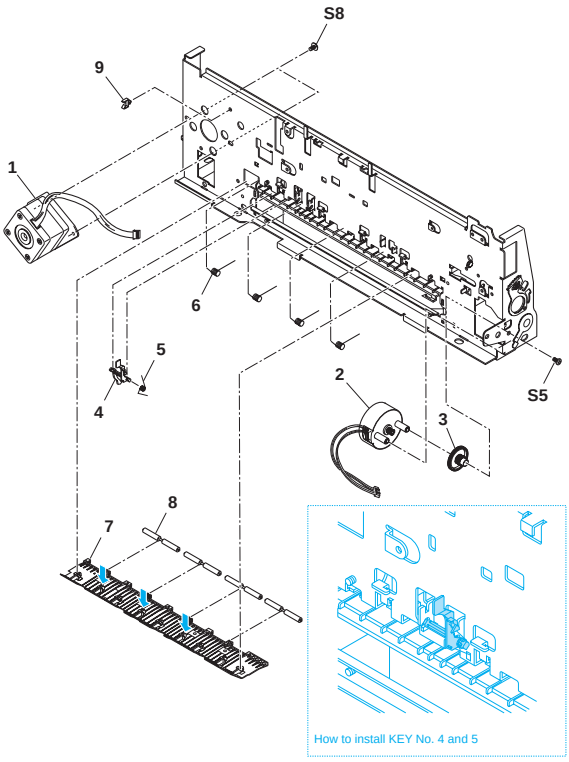

FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	REMARKS
5 - 1	QB1-3685-000		1	CLIP, SHAFT	
2	QB1-4594-000		1	LEVER, FORMS THICKNESS	
3	QB1-3776-000		1	SPRING, TORSION	
4	QG5-1510-000		1	PURGE UNIT	
5	QH2-2415-000		1	CABLE, SENSOR	
6	WG8-5362-000	N	1	IC, TLP1241(C5), PHOTO INTERRUPTER	
7	QH4-4309-000		1	MOTOR, PAPER LIFTING	
8	QS5-0246-000		1	GEAR, TRANSMISSION	
9	QB1-4654-000		1	GEAR, CLUTCH	
6 - 1	QF5-0565-000		1	IDLER ROLLER ASS'Y	
2	QB1-3685-000		1	CLIP, SHAFT	
3	QB1-4597-000		1	HOLDER, CARRIAGE RIBBON CABLE	
4	QG5-1509-000		1	CARRIAGE UNIT	
5	QB1-4595-000	N	1	SHAFT, CARRIAGE	
6	QB1-4596-000		1	BUSHING	
7 - 1	QG5-1515-000		1	HP SENSOR HOLDER UNIT	
2	QB1-4601-000		1	GUIDE, RIBBON CABLE	
3	QH2-2405-000		1	CARRIAGE RIBBON CABLE	
4	QH2-2406-000		1	CARRIAGE RIBBON CABLE	
5	QH2-2407-000		1	CARRIAGE RIBBON CABLE	
6	QG2-3158-000		1	CARRIAGE BOARD ASS'Y	
8 - 1	QH4-4306-000		1	MOTOR, CARRIAGE	
2	QH4-4304-000		1	MOTOR, PAPER FEED	
3	QS5-0237-000		1	GEAR, SLOW DOWN	
4	QB1-4271-000		1	ARM, PAPER SENSOR	
5	QB1-4336-000		1	SPRING, TORSION	
6	QB1-4335-000		4	SPRING, TORSION	
7	QB1-4264-000		1	HOLDER, PRESSURE	
8	QB1-4265-000		4	ROLLER, PRESSURE	
9	WT2-0387-000		1	CLAMP	

FIGURE 9 PAPER FEED UNIT

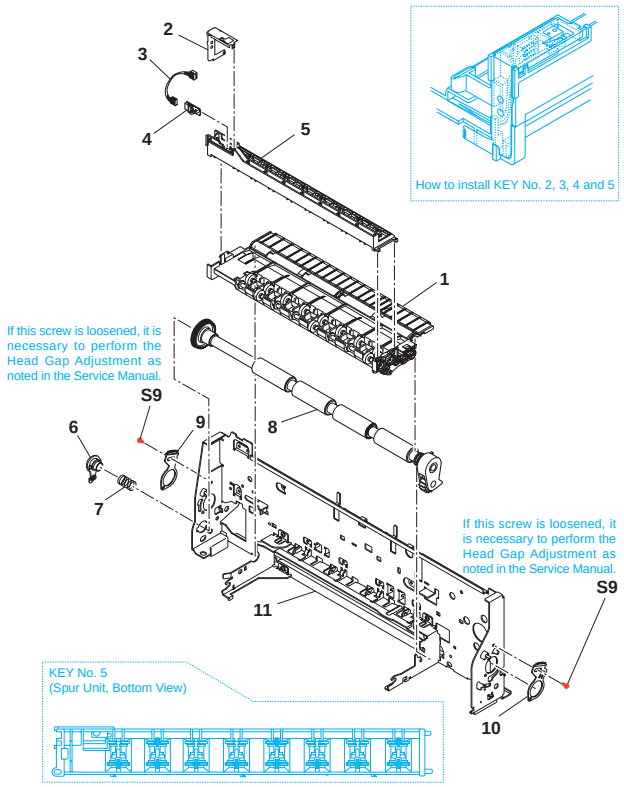

FIGURE 10 ASF PART

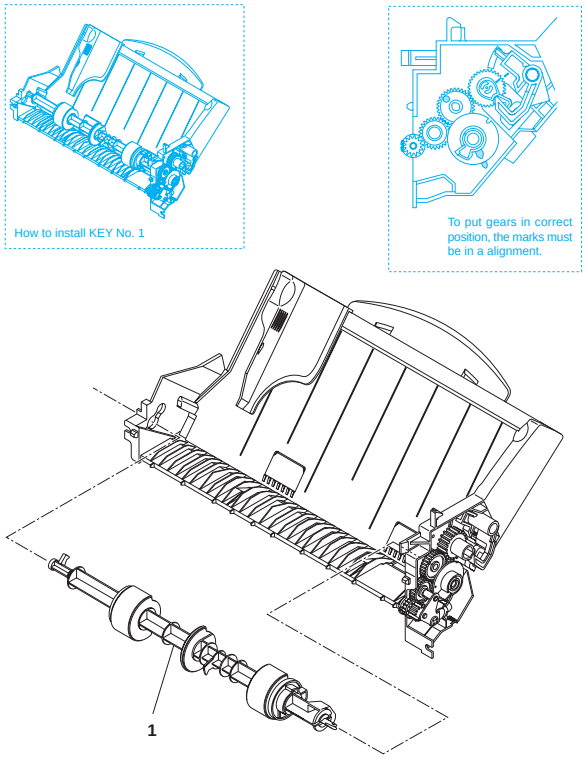

FIGURE 11 LOGIC BOARD COMPONENT

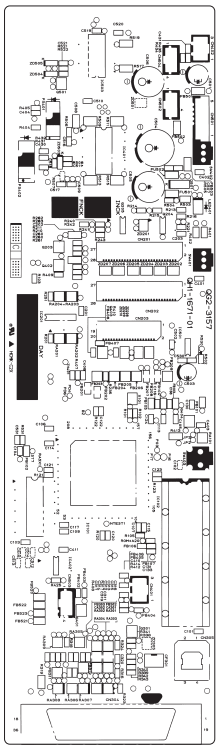

FIGURE 12 CARTRIDGE

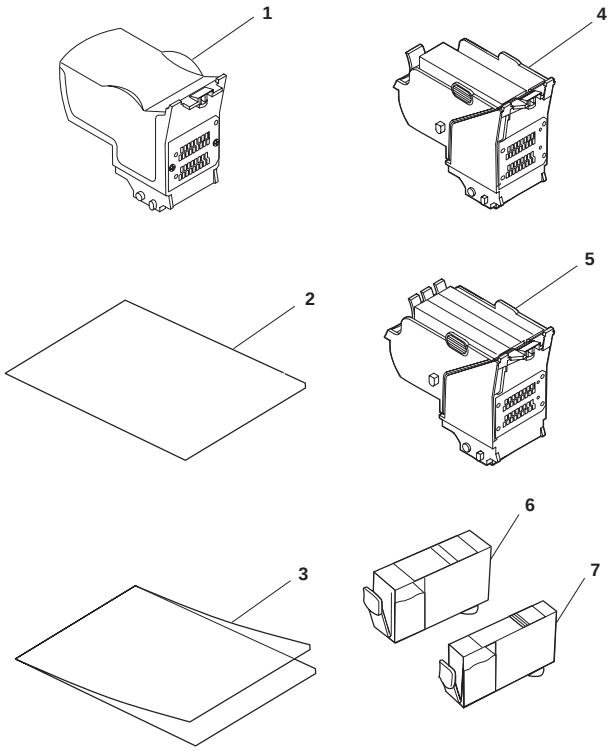

FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	REMARKS
9 - 1	QG5-1436-000		1	PLATEN ASS'Y	
2	QB1-4282-000		1	COVER, INK SENSOR	
3	QH2-2351-000		1	INK SENSOR CONNECTOR ASS'Y	
4	QH8-0220-000		1	IC, GP4S10S, PHOTO INTERRUPTER	
5	QG5-1437-000		1	SPUR HOLDER ASS'Y	
6	QB1-4593-000		1	BUSHING	
7	QS5-2252-000		1	SPRING, COIL	
8	QF5-0564-000		1	FEED ROLLER ASS'Y	
9	QB1-4272-000	N	1	BUSHING, FORMS THICKNESS (L)	
10	QB1-4273-000	N	1	BUSHING, FORMS THICKNESS (R)	
11	NPN		1	FRAME UNIT	
10 - 1	QG5-1431-000		1	PICK-UP ROLLER UNIT	
11 - FU501	WD1-5059-000		1	FUSE: FCC3220202	
FU502	WD1-5059-000		1	FUSE: FCC3220202	
IC101	QH8-0879-000		1	IC, UPD82674GD-022-LML, ASIC	
IC102	QG2-3041-000		1	IC, K3P4V173AD-DC10000, MASKED-ROM	
IC103	WA7-0327-000	N	1	IC, MB81V18165B-60PFTN, DRAM	
IC401	WA4-7472-000		1	IC, TB62201AF, DRIVER	
IC402	WA7-0947-000	N	1	IC, S-93C56AFJ, EEP-ROM	
IC503	WA4-7264-000		1	IC, MTD2002G, DRIVER	
LED401	WG2-5157-000	N	1	LED: SEC2494C	
PS401	WG8-5356-000	N	1	IC, TLP831(CANO), PHOTO INTERRUPTER	
PS402	QH7-0641-000	N	1	IC, TLP832(CANO), PHOTO INTERRUPTER	
SW401	WC2-5366-000	N	1	SWITCH, PUSH: SKQNLA	
SW402	WC2-5366-000	N	1	SWITCH, PUSH: SKQNLA	
SW403	WC2-5068-000	N	1	SWITCH, PUSH: SKHVLH	
TH401	WP2-5104-000	N	1	THERMISTOR: TBPS1473J475H5Q	
X101	WK2-6002-000	N	1	OSCILLATOR, CERAMIC: 48MHZ	
12 - 1	QG3-4005-000	N	1	SCANNING CARTRIDGE	
2	QA2-4532-000		1	SHEET, WHITE STANDARD	
3	QA2-4623-000		1	HOLDER, PLASTIC (III)	A4
	QA2-4628-000	N	1	HOLDER, SCANNING	B5
4	NPN		1	BLACK BJ CARTRIDGE BC-30	CONSUMABLES
5	NPN		1	COLOR BJ CARTRIDGE BC-31	CONSUMABLES
	NPN		1	PHOTO BJ CARTRIDGE BC-32 PHOTO	CONSUMABLES
6	NPN		1	BLACK INK TANK BCI-3BK	CONSUMABLES
7	NPN		1	CYAN INK TANK BCI-3C	CONSUMABLES
	NPN		1	MAGENTA INK TANK BCI-3M	CONSUMABLES
	NPN		1	YELLOW INK TANK BCI-3Y	CONSUMABLES
	NPN		1	PHOTO CYAN INK TANK BCI-3C PHOTO	CONSUMABLES
	NPN		1	PHOTO MAGENTA INK TANK BCI-3M PHOTO	CONSUMABLES
	NPN		1	PHOTO BLACK INK TANK BCI-3BK PHOTO	CONSUMABLES

FIGURE 13 TOOL

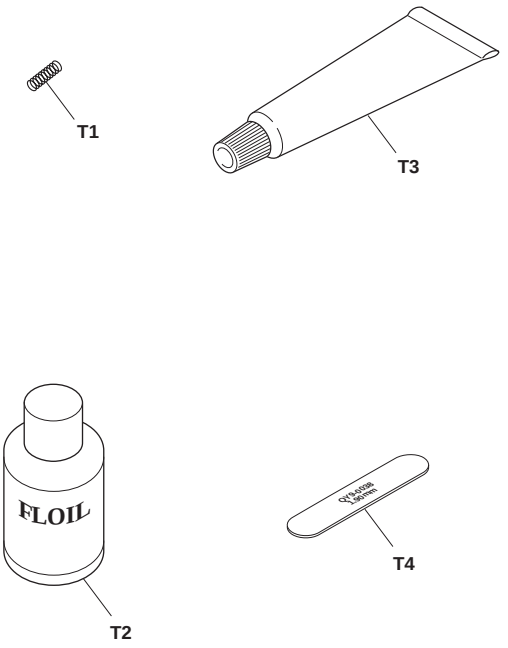

FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	REMARKS
T - 1	QY9-0043-000		1	SPRING, TENSION	
2	CK-0562-000		1	GREASE, MOLYKOTE PG-641	
3	QY9-0045-000		1	LUBE, FLOIL 946P, OIL	
4	QY9-0038-000		1	GAUGE, GAP: 1.9MM	

B. SCREWS & WASHERS LIST

FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	REMARKS
S - 1	XA9-1137-000			SCREW, TAP, WASHER HEAD, M3X6	
2	XB6-7300-407			SCREW, TP: M3 x 4 MM	
3	XB1-2301-207			SCREW, M3x12	
4	XB4-7300-809			SCREW, B-TIGHT: M3 X 8 MM	
5	XB1-2300-607			SCREW, MACHINE, BINDING HEAD, M3x6	
6	XB2-8300-807			SCREW, M3X8	
7	XB4-7301-009			SCREW, B-TIGHT: M3 X 10 MM	
8	XB6-7300-609			SCREW, MACHINE M3X6	
9	XA9-1136-000			SCREW, RS M3X4	

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C. NUMERICAL INDEX

PART NUMBER	FIGURE & KEY NO.	DESCRIPTION
CK-0562-000	T - 2	GREASE, MOLYKOTE PG-641
QA2-4532-000	12 - 2	SHEET, WHITE STANDARD
QA2-4623-000	12 - 3	HOLDER, PLASTIC (III)
QA2-4628-000	12 - 3	HOLDER, SCANNING
QB1-3685-000	5 - 1	CLIP, SHAFT
	6 - 2	
QB1-3776-000	5 - 3	SPRING, TORSION
QB1-4264-000	8 - 7	HOLDER, PRESSURE
QB1-4265-000	8 - 8	ROLLER, PRESSURE
QB1-4271-000	8 - 4	ARM, PAPER SENSOR
QB1-4272-000	9 - 9	BUSHING, FORMS THICKNESS (L)
QB1-4273-000	9 - 10	BUSHING, FORMS THICKNESS (R)
QB1-4282-000	9 - 2	COVER, INK SENSOR
QB1-4335-000	8 - 6	SPRING, TORSION
QB1-4336-000	8 - 5	SPRING, TORSION
QB1-4578-000	2 - 1	OUTPUT TRAY
QB1-4579-000	2 - 9	COVER, I/F
QB1-4580-000	3 - 2	COVER, LEVER
QB1-4581-000	2 - 2	COVER, FRONT
QB1-4582-000	2 - 3	PLATE, MODEL NAME
QB1-4584-000	2 - 8	BUTTON, PUSH
QB1-4585-000	2 - 7	GUIDE, INDICATOR
QB1-4589-000	4 - 3	ABSORBER, INK
QB1-4590-000	4 - 2	ABSORBER, INK
QB1-4593-000	9 - 6	BUSHING
QB1-4594-000	5 - 2	LEVER, FORMS THICKNESS
QB1-4595-000	6 - 5	SHAFT, CARRIAGE
QB1-4596-000	6 - 6	BUSHING
QB1-4597-000	6 - 3	HOLDER, CARRIAGE RIBBON CABLE
QB1-4601-000	7 - 2	GUIDE, RIBBON CABLE
QB1-4642-000	2 - 5	BUTTON, PUSH
QB1-4654-000	5 - 9	GEAR, CLUTCH
QB1-4664-000	2 - 6	SPRING, BUTTON
QF5-0564-000	9 - 8	FEED ROLLER ASS'Y
QF5-0565-000	6 - 1	IDLER ROLLER ASS'Y
QG2-3041-000	11 - IC102	IC, K3P4V173AD-DC10000, MASKED-ROM
QG2-3157-000	3 - 5	LOGIC BOARD ASS'Y
QG2-3158-000	7 - 6	CARRIAGE BOARD ASS'Y
QG2-3216-000	4 - 1	DC CONNECTOR ASS'Y
QG3-4005-000	12 - 1	SCANNING CARTRIDGE
QG5-1290-000	1 - 1	BJ CARTRIDGE CONTAINER
QG5-1431-000	10 - 1	PICK-UP ROLLER UNIT
QG5-1436-000	9 - 1	PLATEN ASS'Y
QG5-1437-000	9 - 5	SPUR HOLDER ASS'Y
QG5-1504-000	2 - 4	UPPER COVER UNIT
QG5-1505-000	3 - 1	BOTTOM CASE UNIT
QG5-1506-000	3 - 4	SHEET FEEDER UNIT
QG5-1509-000	6 - 4	CARRIAGE UNIT
QG5-1510-000	5 - 4	PURGE UNIT
QG5-1515-000	7 - 1	HP SENSOR HOLDER UNIT
QH2-2351-000	9 - 3	INK SENSOR CONNECTOR ASS'Y
QH2-2405-000	7 - 3	CARRIAGE RIBBON CABLE
QH2-2406-000	7 - 4	CARRIAGE RIBBON CABLE
QH2-2407-000	7 - 5	CARRIAGE RIBBON CABLE
QH2-2415-000	5 - 5	CABLE, SENSOR
QH3-3383-000	3 - 3	AC ADAPTER: 100V-120V 50/60HZ
QH3-3386-000	3 - 3	AC ADAPTER: 100V-120V 50/60HZ
QH3-3388-000	3 - 3	AC ADAPTER: 220V-240V 50/60HZ

PART NUMBER	FIGURE & KEY NO.	DESCRIPTION
QH3-3389-000	3 - 3	AC ADAPTER: 220V-240V 50/60HZ
QH4-4304-000	8 - 2	MOTOR, PAPER FEED
QH4-4306-000	8 - 1	MOTOR, CARRIAGE
QH4-4309-000	5 - 7	MOTOR, PAPER LIFTING
QH7-0641-000	11 - PS402	IC, TLP832(CANO), PHOTO INTERRUPTER
QH8-0220-000	9 - 4	IC, GP4S10S, PHOTO INTERRUPTER
QH8-0879-000	11 - IC101	IC, UPD82674GD-022-LML, ASIC
QS5-0237-000	8 - 3	GEAR, SLOW DOWN
QS5-0246-000	5 - 8	GEAR, TRANSMISSION
QS5-2252-000	9 - 7	SPRING, COIL
QY9-0038-000	T - 4	GAUGE, GAP: 1.9MM
QY9-0043-000	T - 1	SPRING, TENSION
QY9-0045-000	T - 3	LUBE, FLOIL 946P, OIL
WA4-7264-000	11 - IC503	IC, MTD2002G, DRIVER
WA4-7472-000	11 - IC401	IC, TB62201AF, DRIVER
WA7-0327-000	11 - IC103	IC, MB81V18165B-60PFTN, DRAM
WA7-0947-000	11 - IC402	IC, S-93C56AFJ, EEP-ROM
WC2-5068-000	11 - SW403	SWITCH, PUSH: SKHVLH
WC2-5366-000	11 - SW401	SWITCH, PUSH: SKQNLA
	11 - SW402	
WD1-5059-000	11 - FU501	FUSE: FCC3220202
	11 - FU502	
WG2-5157-000	11 - LED401	LED: SEC2494C
WG8-5356-000	11 - PS401	IC, TLP831(CANO), PHOTO INTERRUPTER
WG8-5362-000	5 - 6	IC, TLP1241(C5), PHOTO INTERRUPTER
WK2-6002-000	11 - X101	OSCILLATOR, CERAMIC: 48MHZ
WP2-5104-000	11 - TH401	THERMISTOR: TBPS1473J475H5Q
WT2-0387-000	8 - 9	CLAMP
WT3-5060-000	1 - 5	CORD, POWER
WT3-5069-000	1 - 4	CORD, POWER
WT3-5090-000	1 - 6	CORD, POWER
WT3-5095-000	1 - 3	CORD, POWER
XA9-1136-000	S - 9	SCREW, RS M3X4
XA9-1137-000	S - 1	SCREW, TAP, WASHER HEAD, M3X6
XB1-2300-607	S - 5	SCREW, MACHINE, BINDING HEAD, M3x6
XB1-2301-207	S - 3	SCREW, M3x12
XB2-8300-807	S - 6	SCREW, M3X8
XB4-7300-809	S - 4	SCREW, B-TIGHT: M3 X 8 MM
XB4-7301-009	S - 7	SCREW, B-TIGHT: M3 X 10 MM
XB6-7300-407	S - 2	SCREW, TP: M3 x 4 MM
XB6-7300-609	S - 8	SCREW, MACHINE M3X6

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